

**AM/NS CALVERT LLC**

MOBILE COUNTY, AL  
FACILITY No.: 503-0095

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PREVENTION OF SIGNIFICANT DETERIORATION  
PRELIMINARY DETERMINATION

JANUARY 20, 2021

**AM/NS CALVERT LLC**  
MOBILE COUNTY, AL  
Facility No.: 503-0095

On July 20, 2020, AM/NS Calvert, LLC submitted an air permit application for the facility located at 1 Steel Way, Calvert, Alabama. A revision to the application was received on December 31, 2020.

The facility has proposed to add the following to their steel mill: two new meltshops each consisting of a 331 TPH electric arc furnaces (EAF), twin ladle metallurgy furnace (LMF), degasser with flare, and a continuous caster; scarfing operations; slag processing operations; scrap yard operations; caster cooling tower; material storage silos; and seven emergency generator engines. Per meltshop, annual molten steel production shall be limited to 1.93 million tons per year (TPY), and slab throughput to the scarfer shall be limited to 1.38 TPY.

## **PROCESS DESCRIPTION**

AM/NS owns and operates a carbon steel strip mill in Calvert, AL. The mill produces steel strips in various grades and/or types of steel in various forms (coils, slits, sheets, etc.) for general industrial use. According to the application, much of their product would be consumed by the automotive industry, appliance industry, tube manufacturers, and steel fabricators, among others. AM/NS receives carbon steel slabs primarily by barge. The carbon steel slabs are heated and rolled to form a long strip in the hot strip mill. After rolling, the coils are either prepared for sale or proceed to the pickling lines. After pickling, if needed, the strips are cold-rolled or further processed in the galvanizing lines, annealed in batch furnaces, or temper rolled.

Carbon steel slabs processed in the existing steel strip mill are currently purchased from other facilities. The new meltshops would produce steel slabs in house. Steel scrap will be charged into and melted in each EAF. Molten steel will be refined to spec in the LMF, and further impurities may be removed via degassing operations. Ladles of refined molten steel will drain to the continuous caster to produce slabs to be sent to the existing mill; slabs may be scarfed first to remove surface defects.

## **PREVENTION OF SIGNIFICANT DETERIORATION (PSD)**

Because AM/NS Calvert is a major source with respect to PSD, the new meltshops project would qualify as a major source modification since the emissions of PM, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO, VOC, lead (Pb), and CO<sub>2e</sub> would be increased more than the significant emissions thresholds listed in ADEM Admin. Code r. 335-3-14-.04(1)(w). AM/NS has stated that the emissions from the existing steel strip mill will not increase as a result of the new meltshops and associated operations. The proposed major modification would be subject to ADEM Admin. Code r. 335-3-14-.04 which was adopted pursuant to the federal requirements for prevention of significant deterioration (PSD).

PSD regulations were designed to limit pollutant concentration increases in areas that are cleaner than the National Ambient Air Quality Standards (NAAQS). The regulations establish increments that set ceilings on the amount of increased ambient pollutant concentrations that will be allowed in a PSD area. Sources subject to PSD regulations must comply with specific pre-construction review requirements.

A major source or major modification under a PSD review must be constructed with Best Available Control Technology (BACT). Additionally, the effects on soils, vegetation, visibility, and ambient air quality must be addressed for each applicable pollutant. If the net air emissions increase of any applicable pollutant is less than its significance emission rate, PSD does not apply for that pollutant.

The following table shows the PSD significant emissions increase threshold values and emission increases as specified in the application submitted:

<b>Pollutant</b>	<b>PSD Significant Emission Rate (TPY)</b>	<b>Proposed Emission Rate Increase (TPY)</b>	<b>Significant Source</b>
<b>Particulate Matter (PM)</b>	25	523.52	YES
<b>Particulate Matter (&lt; 10 µm) (PM<sub>10</sub>)</b>	15	472.87	YES
<b>Particulate Matter (&lt; 2.5 µm) (PM<sub>2.5</sub>)</b>	10	454.28	YES
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>	40	675.24	YES
<b>Nitrogen Oxides (NO<sub>x</sub>)</b>	40	695.27	YES
<b>Carbon Monoxide (CO)</b>	100	4,402.32	YES
<b>Volatile Organic Compounds (VOCs)</b>	40	260.16	YES
<b>Lead (Pb)</b>	0.6	3.86	YES
<b>Greenhouse Gases (CO<sub>2</sub>e)</b>	75,000	1,652,792.72	YES

Per ADEM Admin. Code r. 334-3-14-.04(1)(k)2., greenhouse gas emissions are only subject to PSD requirements if there is a significant net emissions increase of greenhouse gas emissions, and there is a significant net emissions increase of at least one NSR pollutant. Since both of these criteria apply to this project, the greenhouse gases will be subject to PSD requirements.

## **MELTSHOPS**

Within each meltshop, AM/NS will operate each EAF in batch mode, charging scrap steel and scrap substitutes, melting, and tapping. During normal operation, cold scrap metal and scrap substitutes, carbon, and fluxing agents are charged into the EAF shell, powered by a high-powered transformer. A larger electrical potential is applied to the carbon electrodes. The combination of the heat for the arcing process and gas jets melts the scrap and scrap substitutes into molten steel. As the scrap begins to melt, the temperature of the exhaust gas from the EAF increases appreciably. As melting progresses, oxygen lancing, carbon injection, and (as needed) alloy injection operations are conducted. Prior to admixture with blower air, the temperature of the exhaust gas stream can approach 3,000°F, which is approximately the temperature of molten steel. AM/NS did not attest to the expected batch cycle duration of their EAFs, but batch cycles of similar units typically vary from 40 to 50 minutes.

The capture system for the exhaust gases from the EAFs is a direct evacuation control (DEC) and an overhead roof exhaust system consisting of a canopy hood. The DEC duct locally evacuates the exhaust gases directly from the furnace to the main duct system, which is then directed to the EAF baghouses. The canopy hood captures emissions generated during charging, material handling, melting, refining, tapping, and de-slagging and directs them through the main duct system to the EAF baghouses. Additionally, the canopy hood will capture emissions generated by the ladle metallurgy furnace (LMF) and caster associated with each baghouse.

Each meltshop will be controlled by one baghouse with a design volume flow rate of 1,428,000 acfm and 1,392,300 dscfm.

### **BEST AVAILABLE CONTROL TECHNOLOGY (BACT)**

#### **EAFs, LMFs, and Continuous Casters**

In addition to all the pollutant-specific BACT limits addressed below, AM/NS will limit annual steel production from each EAF to 1,929,043 TPY. At a maximum rate of 331 TPH of steel production, this translates to 5,828 hours per year.

#### *Particulate Matter and Lead*

Particulate emissions from the each EAF will be captured by the DEC and roof exhaust system and ultimately exhausted through a baghouse. The EAFs are subject to New Source Performance Standard (NSPS) Subpart AAa. The NSPS emission standard for PM<sub>filterable</sub> emissions from an EAF is 0.0052 gr/dscf and 6% opacity.

In addition to identifying technical concerns with ESPs, cyclones, and scrubbers, AM/NS determined a baghouse to be the most effective control device for particulate matter emissions from EAFs. Fabric filtration in baghouses is the predominant control device for EAFs within the industry.

A review of the RBLC database revealed that EAFs have generally been permitted at 0.0018 gr/dscf PM<sub>filterable</sub> and 0.0052 gr/dscf PM<sub>10</sub> and PM<sub>2.5</sub>. Nucor Steel Decatur and Nucor Steel Tuscaloosa, in Alabama, have lead limits of 0.002 lb/ton. AM/NS has proposed limiting PM<sub>filterable</sub> to 0.0018 gr/dscf, PM<sub>10</sub> and PM<sub>2.5</sub> to 0.0052 gr/dscf, and lead to 0.002 lb/ton. ADEM

will also limit lead to 0.66 lb/hr, which at a steel production rate of 331 TPH is equivalent to 0.002 lb/ton.

## *NO<sub>x</sub>*

NO<sub>x</sub> is formed from the chemical reaction between nitrogen and oxygen at high temperatures. NO<sub>x</sub> formation occurs by different mechanisms. In the case of an EAF, NO<sub>x</sub> predominantly forms from thermal dissociation and subsequent reaction of nitrogen and oxygen molecules in the combustion air. This mechanism of NO<sub>x</sub> formation is referred to as thermal NO<sub>x</sub>. The other mechanisms of NO<sub>x</sub> formation, such as fuel NO<sub>x</sub> and prompt NO<sub>x</sub>, are thought to have lesser contributions to NO<sub>x</sub> emissions from EAFs.

AM/NS proposes using oxy-fuel fired burners to limit the presence of nitrogen in combustion air and subsequent formation of thermal NO<sub>x</sub>. AM/NS also examined and eliminated from consideration the usage of selective catalytic reduction (SCR), non-selective catalytic reduction (NSCR), and selective non-catalytic reduction (SNCR) as post-emissions NO<sub>x</sub>-control technologies. SCR, the usage of a nitrogen-based reagent (typically ammonia or urea) to reduce NO<sub>x</sub>, cannot operate upstream of the baghouse due to particulate fouling and cannot operate in low temperature range (~250 °F) downstream of the baghouse; AM/NS also anticipates approximately 100 TPY of ammonia emitted, assuming ammonia slip of around 7 ppmv. The small amounts of zinc and phosphorus in EAF emissions, from galvanized scrap, would poison available NSCR devices. EAFs operate on batch cycles and their emissions have variable temperature and volumetric flowrate over the course of each batch. Accordingly, AM/NS argues that these variable conditions are not conducive to the operation of an SNCR system and that like the SCR system, it would have to be located upstream of the baghouse where the temperature would be too low even at peak. Per a review of the RBLC database, there are no known applications of post-emissions NO<sub>x</sub> controls on an EAF.

A review of the RBLC database shows limits established for EAFs ranging from 0.20 lb/ton to 1.43 lb/ton. AM/NS has proposed limiting NO<sub>x</sub> emissions to 0.35 lb/ton. ADEM will also limit NO<sub>x</sub> to 115.9 lb/hr, which at a steel production rate of 331 TPH is equivalent to 0.35 lb/ton.

## *CO*

CO will be emitted as a byproduct of incomplete combustion from the following potential sources – charged and injection carbon, scrap steel, scrap substitutes, electrodes, natural gas, and “foaming slag” operating practices. EAFs generate CO via oxidation of carbon introduced into the furnace charge to refine the steel as well as through the sublimation/oxidation of the carbon electrode.

AM/NS examined the following technologies potentially applicable to the electric arc furnaces: CO oxidation catalysts, post-combustion reaction chamber, thermal oxidation, catalytic oxidation, oxygen injection, good combustion practices, and direct evacuation control (DEC). AM/NS determined that the use of a CO oxidation catalyst, post-combustion reaction chambers, thermal oxidizers, and catalytic oxidizers would be technically infeasible due to the fact that the temperature requirements for these processes would not be met by the EAFs' exhaust streams downstream of the baghouse, while particulate fouling would occur upstream of the baghouse. Additionally, heavy metal content of the exhaust would be

expected to poison the catalytic oxidizer. AM/NS did not expect oxygen injection (whereby CO further oxidized in the presence of excess oxygen) to reduce CO emissions by a provable or appreciable amount. AM/NS proposes the usage of DEC to remove exhaust gases from the EAF prior to CO levels peaking in an oxygen-lean environment. Good combustion practices that AM/NS states they will follow include maintaining good operational logs, training, routine and preventative maintenance, burner and control adjustments (overlapping with DEC operation), and monitoring fuel quality.

A review of the RBLC database revealed that other steel mills have an emission limit ranging from about 1.99 – 4.8 lbs/ton of steel produced. AM/NS has proposed limiting CO emissions to 2.2 lb/ton. ADEM will also limit CO to 728.2 lb/hr which at a steel production rate of 331 TPH is equivalent to 2.2 lb/ton.

### VOC

VOC emissions from the EAFs will be intermittent and limited to the brief period during EAF charging when organic compounds such as oil or paint present in the scrap are volatilized.

AM/NS examined the following technologies potentially applicable to controlling VOC emissions from EAFs, some of which are also means of controlling CO emissions: catalytic oxidation, thermal oxidation, post-combustion reaction chambers, degreasing of scrap metal prior to charging in the EAF, and a scrap management program. As previously discussed, AM/NS considers catalytic oxidation, thermal oxidation, and post-combustion reaction chambers to be technically infeasible. AM/NS ultimately determined that degreasing of scrap metal would be technically feasible; however, the cost per ton for degreasing is estimated to be \$65,944. Therefore, AM/NS determined that degreasing would be economically infeasible. AM/NS has chosen to implement a scrap management program to minimize the amount of VOC (oils and coatings) in their feedstock.

A review of the RBLC database revealed that other steel mills have an emission limit ranging from about 0.10 – 0.43 lbs/ton of steel produced. AM/NS has proposed limiting VOC emissions to 0.13 lb/ton. ADEM will also limit VOC to 43.0 lb/hr which at a steel production rate of 331 TPH is equivalent to 0.13 lb/ton.

### SO<sub>2</sub>

SO<sub>2</sub> emissions from the EAFs are attributable to the sulfur content of the raw materials charged in the EAFs and to the materials which are used in the foamy slag process.

AM/NS examined the following technologies potentially applicable to the EAFs: lower-sulfur charge substitution, scrap management program, and flue gas desulfurization (FGD) options including: wet scrubbing, dry scrubbing, and dry sorbent injection (DSI). AM/NS determined that the flue gas desulfurization options would be technically infeasible because of the large gas flow (and proportionally low SO<sub>2</sub> concentrations in the exhaust stream) and the large amplitude temperature variations of the exhaust gases from the EAFs.

Despite low-sulfur charge substitution being the predominant form of controlling sulfur emissions from EAFs across the industry, AM/NS contends that low-sulfur charge substitution will not be practical in the future due to “decreasing availability” and “increasing costs”. However, they did not sufficiently prove in their analysis that the practice is either

technically or economically infeasible. AM/NS proposes the scrap management program to minimize the presence of oil in charged scrap (as discussed) will sufficiently reduce SO<sub>2</sub> emissions, despite sulfur being primarily associated with the carbon sources charged to the EAFs rather than the relatively small amounts found in oils and lubricants which may contaminate scrap.

A review of the RBLC database revealed that other steel mills have an emission limit ranging from about 0.10 – 1.73 lbs/ton of steel produced. AM/NS has proposed limiting SO<sub>2</sub> emissions to 0.35 lb/ton. ADEM will also limit SO<sub>2</sub> to 115.9 lb/hr which at a steel production rate of 331 TPH is equivalent to 0.13 lb/ton. ADEM will require that the sulfur content of their carbon sources, in mass %, not exceed the sulfur content of the carbon used in the most recent compliance test that demonstrated compliance (under-worst case conditions [i.e. high-carbon steel]).

### *Greenhouse Gases (CO<sub>2</sub>e)*

CO<sub>2</sub>e emissions from the EAFs are generated primarily during the melting and refining processes, which remove carbon as CO and CO<sub>2</sub> from the charge materials and carbon electrodes.

AM/NS examined the following technologies potentially applicable to steel mills: carbon capture and storage and energy efficiency measures. AM/NS determined that a carbon capture and storage system would be economically infeasible because a 150 mile pipeline would need to be constructed in order to transport the CO<sub>2</sub> to the nearest CO<sub>2</sub> sequestration project site, resulting in an initial capital investment of \$350,923,560.00 for such a system. The energy efficiency measures AM/NS proposes to use are variable-speed drives on their dust collection fans (to match variable fan demand), oxy-fuel burners, bottom stirring of the EAF, and foamy slag within the EAF. Additionally, AM/NS would reduce GHG emissions from the LMF through more efficient caster ladle heating.

AM/NS proposes limiting CO<sub>2</sub>e emissions to 810,413 TPY as BACT.

### **Caster Spray Vents**

#### *Particulate Matter*

Although fumes generated in the casting process will be captured in the canopy hoods and vented to the same baghouse which controls each EAF's particulate emissions, steam generated via the cooling water contacting hot steel will be captured in the caster steam exhaust system and vented to that meltshop's caster spray vent. Particulate matter is the only pollutant of concern from this process.

AM/NS examined the following technologies potentially applicable to controlling particulate matter: baghouses, wet scrubbers, ESPs or WESPs, and mist eliminators. Baghouses are not designed for wet media and would suffer from plugging. AM/NS estimates an uncontrolled particulate loading rate of 0.003 gr/dscf at the outlet, which is far lower than any particulate loading rate that wet scrubbers, WESPs, and mist eliminators are designed to handle. AM/NS proposes good work practices, including inspections, as their chosen compliance method.

AM/NS proposes limiting PM emissions to 0.003 gr/dscf as BACT. This is approximate to the values for similar units in the RBLC.

### **Degassing Operations**

In degassing operations, oxygen blowing is used to remove impurities including nitrogen, sulfur, and excess carbon (although sulfur is expected to be retained in the slag layer rather than emitted as SO<sub>2</sub>). Degassing is a batch process, and off-gasses from each batch will be rich in CO with non-negligible PM as well.

Matching the combined steel production rate for both EAFs (1,929,043 TPY each) and in addition to all the pollutant-specific BACT limits addressed below, AM/NS will limit annual steel throughput to both degassing operations to combined 3,858,085 TPY. At a maximum rate of 331 TPH of steel production from each EAF, this translates to 5,828 hours per year. Though the degassing operation associated with EAF #1 is a Ruhrstahl-Heraeus (RH) process and the degassing operation associated with EAF #2 is a Vacuum Tank Degassing (VTD) process, both are expected to have equivalent emission profiles after control by flare and both will be capable of processing most of the throughput from both of the EAFs simultaneously. AM/NS is anticipating that the RH Degassing Operation will process 3,196,699 TPY and the VTD Operation will process 661,386 TPY, but for flexibility is proposing the aforementioned combined throughput limit.

### *Particulate Matter/Lead*

AM/NS examined the following technologies potentially applicable to controlling both PM from the process and PM produced by the flare chosen as a control device for CO emissions: baghouses, wet scrubbers, and ESPs. These control devices are not suitable to being upstream of a flare (which also could not be designed as an open-air flare), and there are no examples in the RBLC of any particulate control devices used on degassing operations in conjunction with a flare. AM/NS proposes good system design, including smokeless flares and use of clean natural gas fuel, and proper maintenance instead as methods of compliance.

AM/NS proposes limiting PM<sub>10</sub> emissions to 6.52E-4 lb/ton as BACT, which ADEM will permit as an equivalent 0.008 gr/dscf. Lead emissions are expected to be negligible from this system; therefore, BACT is not necessary. The flare will be subject to the smokeless operating requirements of 40 CFR §60.18.

### *NO<sub>x</sub>*

NO<sub>x</sub> will be emitted from the flare chosen as a control device for CO emissions. Discounting all post-control NO<sub>x</sub> reduction systems given the nature of open-air flares, AM/NS addressed the following methods of reducing NO<sub>x</sub> associated with the operation of a flare: air-assist or steam-assist, flare gas recovery, proper equipment design and operation. Flare gas recovery, which consists of compressing gas which would be flared and mixing it into the fuel gas system, is technically infeasible due to both the batch nature of the process and the variable content of the gas (different grades of steel produce different off gasses). AM/NS is not proposing to use either steam-assist or air-assist to facilitate better combustion, citing



lack of examples for the industry within the RBLC. AM/NS proposes good equipment design including proper burner set-up.

The most common NO<sub>x</sub> limit for degasser flares on the RBLC is 0.005 lb/ton of steel produced. AM/NS proposes limiting NO<sub>x</sub> emissions to 100 lb/MMscf, which roughly equates to 0.0015 lb/ton.

## *CO*

Decarburization of the molten steel in the degassing process causes emissions of CO. AM/NS dismissed the application of thermal oxidizers, regenerative and recuperative thermal oxidizers, and catalytic oxidizers as unsafe for this application and therefore technically infeasible, due to the CO-laden gas from degassing operations being above the LEL.

The most common CO limit for degasser flares on the RBLC is 0.075 lb/ton of steel produced, which AM/NS has accepted as a CO limit.

## *SO<sub>2</sub> and CO<sub>2e</sub>*

Greenhouse gases will be emitted as products of combustion from the degassing operations due to the use of a flare to control CO. Additionally, presence of sulfur in the flare pilot gas represents the primary source of SO<sub>2</sub> emissions from this process, as sulfur removed from the steel is expected to be retained in the slag rather than be emitted as a gas.

AM/NS will only burn clean natural gas a fuel, with efficient flare design as stated above.

## **Ladle Pre-Heaters**

### *Particulate Matter*

All sources of natural gas combustion have the potential to emit particulate matter via both incomplete combustion and the passthrough of trace noncombustible constituents in the gas.

AM/NS noted that the low concentration of particulates in ladle preheater emissions is not conducive to control via baghouses, ESPs, and scrubbers. However, the canopy hoods installed in the meltshop will route emissions to the meltshop's baghouse which will control the meltshop combined emission stream. AM/NS proposes the use of good combustion practices, including maintaining good operator logs and conducting routine maintenance, as BACT.

AM/NS will only burn clean natural gas a fuel using good combustion practices.

## *NO<sub>x</sub>*

NO<sub>x</sub> is formed from the chemical reaction between nitrogen and oxygen at high temperatures. NO<sub>x</sub> formation occurs by different mechanisms. In the case of ladle preheating, formation of thermal NO<sub>x</sub> is the predominant source of NO<sub>x</sub>.

AM/NS proposes using low-NO<sub>x</sub> burners to limit the presence of nitrogen in combustion air and subsequent formation of thermal NO<sub>x</sub>. AM/NS also examined and eliminated from consideration the usage of selective catalytic reduction (SCR), non-selective catalytic reduction (NSCR), and selective non-catalytic reduction (SNCR) as post-emissions NO<sub>x</sub>-control technologies. When addressing SCR, the usage of a nitrogen-based reagent (typically ammonia or urea) to reduce NO<sub>x</sub>, AM/NS notes that the disparate preheater stations within each meltshop couldn't feasibly be equipped with the ductwork necessary to install SCR. AM/NS notes the emissions from ladle preheaters would be too oxygen rich (4%) for effective NSCR operation (around 0.5%) and that the temperature range is inappropriate for application of SNCR.

AM/NS will be required to use low-NO<sub>x</sub> burners for the ladle preheaters.

### *CO & VOC*

CO will be emitted as a byproduct of incomplete combustion from the ladle preheater burners. VOC emissions are from the incomplete combustion of trace amounts of non-methane, non-ethane hydrocarbons in natural gas. CO and VOC are controlled in a similar fashion and are addressed together below:

AM/NS noted that the CO concentration of emissions from mere natural gas combustion is far too low for effective control by thermal oxidation and catalytic oxidation. Good combustion practices, as noted previously, and clean natural gas fuel will be used.

### *SO<sub>2</sub> and CO<sub>2e</sub>*

Greenhouse gases will be emitted as products of combustion from these units. Additionally, presence of sulfur in the preheater natural gas fuel represents the primary source of SO<sub>2</sub> emissions from this process.

In their analysis, AM/NS notes that wet scrubbers and baghouses coated with various media (ceramic catalyst, dry sorbent, and semi-dry sorbent) all require a significantly larger concentration of SO<sub>2</sub> in the pre-control emissions to effect a noticeable SO<sub>2</sub> reduction.

AM/NS will only burn clean natural gas a fuel, with good combustion practices as stated above.

## **NEW SOURCE PERFORMANCE STANDARDS (NSPS)**

The new EAFs, baghouses, and dust handling systems are subject to 40 CFR part 60, subpart AAa, "*Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.*"

Subpart AAa specifically limits filterable particulate matter emissions to 0.0052 grains/dscf and 3 percent opacity at the control device, 6 percent opacity from the shop due solely to the operations of the electric arc furnace, and 10 percent opacity from the dust handling system. The BACT limits (0.0018 PM<sub>filterable</sub>) are more stringent than the limits in subpart AAa.

Subpart AAa also requires the installation of a continuous opacity monitoring system (COMs) on each baghouse controlling an EAF [§60.273a(a)]. Because AM/NS uses a DEC and conducts daily shop opacity observations, they are not required to install a furnace static pressure monitoring device [§60.273a(d)].

AM/NS must monitor and maintain the control system fan motor amperes and all damper positions to parameters established during compliance tests [§60.274a(c)]; must perform monthly operational inspections of the capture system [§60.274a(d)]; and must monitor charge & tap weights & materials, heat times, COMS data, and a control device operating log during all compliance tests. NSPS AAa requires records to be kept for at least two years, but ADEM is imposing a more stringent five-year retention requirement per ADEM Admin. Code Rule 335-3-16-.05(c)2.(ii).

Per the test methods and procedures in §60.275a(a)-(j) of 40 CFR Part 60, Subpart AAa:

- NO<sub>x</sub> emissions must be determined using 40 CFR 60 Appendix A, Method 7E.
- PM emissions must be determined using 40 CFR 60 Appendix A, Method 5 (filterable) and 40 CFR 51 Appendix A, Method 202 (condensable).
- SO<sub>2</sub> emissions must be determined using 40 CFR 60 Appendix A, Method 6.
- Opacity of emissions must be determined using 40 CFR 60 Appendix A, Method 9.
- NO<sub>x</sub> emissions must be determined using 40 CFR 60 Appendix A, Method 7E.
- CO emissions must be determined using 40 CFR 60 Appendix A, Method 10.
- VOC emissions must be determined using 40 CFR 60 Appendix A, Method 25A.
- Lead emissions must be determined using 40 CFR 60 Appendix A, Method 12.

AM/NS must submit semiannual reports outlining opacity exceedances [§60.276a(b)&(g)]

### **COMPLIANCE ASSURANCE MONITORING (CAM)**

The baghouses controlling the EAFs are subject to CAM requirements for particulate matter. AM/NS submitted a CAM plan for these with the application, prior to Part 64's requirement to submit a CAM plan for large emission sources within one year of startup. The CAM plan will have four performance indicators: opacity measured by the COMS required by NSPS AAa, weekly inspections/maintenance, opacity measured by daily Method 9 observations, and pressure differential across the baghouse.

The flares controlling the degassing operations are subject to CAM requirements for carbon monoxide via having pre-control emissions greater than 100 TPY. Since these are not considered large emission sources under CAM (i.e., their post-control emissions are not also greater than 100 TPY), AM/NS is required to submit a CAM plan with the next renewal of their Title V permit, but submitted it early in the December 31, 2020 revision to the application. They propose two performance indicators: presence of a flame at the flare tip, measured continuously by a thermocouple, and annual flare inspections and routine maintenance. These performance indicators will be included in appendices the permits as monitoring plans.

## **MATERIAL HANDLING, SLAG HANDLING, AND ROAD DUST**

Scrap and other raw materials will be brought to the mill by barge, rail, and trucks. While scrap will be stored in the open, AM/NS has applied to install 51 material storage silos for other material including: 24 alloy storage silos; 10 dolomite, lime, and bauxite storage silos; 8 direct reduced iron (DRI) storage silos; 5 flux material storage silos; 4 hot briquetted iron (HBI) storage silos.

AM/NS will store and process slag generated in their steelmaking activities to recover useable iron. The mineral byproduct, typically separated by particle size (fine and coarse), is primarily used in the agricultural and construction sectors.

The construction and operation of the new meltshops and slag yard will increase vehicular traffic in and around the mill and cause increased emissions of fugitive particulate matter from the plant roads.

### **BEST AVAILABLE CONTROL TECHNOLOGY (BACT)**

#### **Material Handling**

##### *Particulate Matter*

Raw material handling is a source of particulate matter emissions, most of which is fugitive, although material handling occurring inside each meltshop will be captured and controlled by the meltshop canopy hoods. AM/NS proposes a combination of controls on their disparate material handling operations.

Fabric filtration is the most effective form of particulate matter control available, and emissions arising from material handling inside each meltshop will be routed to that respective baghouse. AM/NS stated to the Department in correspondence that their procedures will include loading each charge bucket scrap within the meltshop.

Baghouses are not feasible controls for open-air sources of material handling. Instead, AM/NS proposes to enclose each conveyor and transfer station and use wet suppression within the conveying stations for all but alloys, flux, and carbon to prevent the formation of dust. Alloys, carbon, and flux must remain dry for the process.

The vents on all of the aforementioned storage silos, which are insignificant sources, will be equipped with bin filters to reduce PM emissions.

In addition to the above, AM/NS will practice good housekeeping on all sources.

#### **Slag Handling**

##### *Particulate Matter*

Particulate matter is generated through the crushing & grinding of slag, and fugitive particulate matter is emitted through dumping and handling of slag.

Fabric filtration is inappropriate for controlling emissions from the non-fugitive sources due to the moisture content. AM/NS instead proposes to use water spray on the grinders, conveyors, and drop points to reduce dust formation, in addition to good housekeeping practices.

AM/NS has proposed limits of 0.0012 lb/ton (PM), 0.00054 lb/ton (PM<sub>10</sub>) and 0.0001 (PM<sub>2.5</sub>) from the slag processing operation. However, the nature of fugitive emissions from the process precludes any form of stack testing, giving AM/NS no meaningful way to show compliance with these proposed numerical limits. The air permit for the slag yard will require AM/NS to adhere to the aforementioned operational practices.

## **Road Dust**

### *Particulate Matter*

Particulate matter arises from the mill's access roads via vehicular traffic and, to a lesser extent, via strong winds kicking up loose particles on the roads' surfaces. Unpaved roads naturally present a greater capacity for particulate matter emissions than paved roads.

Water application is the primary method of suppressing road dust formation on unpaved roads, and AM/NS has proposed the use of water trucks on unpaved mill roads. Additionally, AM/NS proposes to post speed limits and use sweepers on paved road, which they collectively term as good housekeeping practices.

AM/NS did not propose a water suppression or road sweeping schedule, but their meltshop permits will contain a requirement that all unpaved roads be flushed or swept once per day, paved roads be flushed or swept once every three days, and paved parking lots be flushed or swept once a quarter, with exceptions for raining or freezing conditions. A sweeper must have a minimum blower capacity of 12,000 cfm, and a water truck must be able to dispense water at a rate of at least 0.32 gal/yd<sup>2</sup>.

## **SCARFING OPERATIONS**

To improve the workability of the steel slabs produced in the meltshop as well as the surface quality of the final sheets produced, AM/NS proposes to install a scarfing operation or scarfer. The scarfer torches off several millimeters of each slab that passes through it; each slab passes through twice, scarfing four surfaces of the slab in total.

### **BEST AVAILABLE CONTROL TECHNOLOGY (BACT)**

#### *Particulate Matter*

Particulate matter, primarily in the form of vaporized metal with the addition of the particulate matter inherent to all combustion sources, is the main category of emissions associated with scarfing operations.

AM/NS addressed baghouses, cyclones, scrubbers, mist eliminators, and WESPs as potential control devices for reducing particulate matter emissions from this process. Mist eliminators are typically used for condensable particulate matter and are not suitable for this process. Cyclones have an extremely low efficiency for smaller particles such as those expected from this process and are not designed for such an application. Baghouses are suitable only for dry media, and the significant amount of water AM/NS states that this process will use would clog the bags. AM/NS judges both WESPs and wet scrubbers to be technically feasible and intends to install and use a WESP, which is a more efficient technology than wet scrubbers in this application, as the control device for their scarfing operations.

The RBLC has BACT information for one scarfing operation in Dearborn, Michigan, where a baghouse controls the operation with a 0.005 gr/dscf limit on PM<sub>2.5</sub>. AM/NS's operation will use more water sprays than that operation, necessitating the use of a WESP. AM/NS has proposed an 0.010 gr/dscf limit on PM<sub>2.5</sub>, but the Department will require an 0.005 gr/dscf limit on PM<sub>2.5</sub> equal to the unit in the RBLC. Additionally, AM/NS will limit annual slab throughput to 1,337,888 TPY.

### **COMPLIANCE ASSURANCE MONITORING (CAM)**

The WESP controlling the scarfing operations is subject to CAM requirements for particulate matter via having pre-control emissions greater than 100 TPY. Since this is not considered a large emission source under CAM (i.e., its post-control emissions are not also greater than 100 TPY), AM/NS is required to submit a CAM plan with the next renewal of their Title V permit, but submitted it early in the December 31, 2020 revision to the application. They propose three performance indicators identical to those found in the CAM plan for their existing WESP: voltage across the WESP, measured continuously and averaged over 3-hour blocks; semi-annual flare inspections and routine maintenance; and daily visual checks for visible emissions.

The above performance indicators will be included in appendices the permits as monitoring plans.

## EMERGENCY ENGINES

Total power outages are a potentially dangerous event for steel mills pouring molten steel through water-cooled casters. As is standard for meltshops in the industry, AM/NS is proposing to install several large emergency engines with the addition of the two meltshops. Each meltshop will have one 2,680 hp and one 335 hp engine to provide power for safe shutdown procedures during a power outage, while the casting water cooling towers will be powered by three 3,618 hp engines.

### **BEST AVAILABLE CONTROL TECHNOLOGY (BACT)**

In addition to adhering to the limit on non-emergency operating hours per year imposed by 40 CFR Part 60 Subpart IIII, AM/NS is limiting the operation of each engine to a *total* of 100 hours per year.

#### *Particulate Matter*

AM/NS cited the use of catalyzed diesel particulate filters (CDPF) as 85% effective at particulate control and technically feasible, but dismissed the technology after estimating it would cost \$119,414/ton of removed particulate when accounting for cost values from EPA's March 5, 2010 *Alternative Control Techniques Document: Stationary Diesel Engines* and their own 100 hour/year operating limit. AM/NS instead elected to limit operating hours as discussed, use clean ultra-low sulfur diesel fuel, and practice good combustion practices. AM/NS did not define what good combustion practices would be, but they are required to maintain and operate their engines according to manufacture specifications per Subpart IIII.

#### *NO<sub>x</sub>*

AM/NS cited the use of selective catalytic reduction (SCR) as 90% effective at nitrogen oxides control and technically feasible, but dismissed the technology after estimating it would cost \$24,637/ton of removed NO<sub>x</sub> when accounting for cost values from EPA's March 5, 2010 *Alternative Control Techniques Document: Stationary Diesel Engines* and their own 100 hour/year operating limit. AM/NS instead elected to limit operating hours as discussed, use clean fuel, and practice good combustion practices. AM/NS did not define what good combustion practices would be, but they are required to maintain and operate their engines according to manufacture specifications per Subpart IIII.

#### *CO and VOC*

AM/NS considered the use of oxidation catalysts for CO and VOC together, as the technology controls both, but deemed their use to be economically infeasible after estimating it would cost \$24,637/ton of removed CO & VOC. They also considered the use of CDPF, but again dismissed the technology after estimating it would cost \$13,485/ton of removed CO & VOC when accounting for cost values from EPA's March 5, 2010 *Alternative Control Techniques Document: Stationary Diesel Engines* and their own 100 hour/year operating limit. AM/NS instead elected to limit operating hours as discussed, use clean fuel, and practice good combustion practices. AM/NS did not define what good combustion practices would be, but they are required to maintain and operate their engines according to manufacture specifications per Subpart IIII.

## SO<sub>2</sub>

The most effective way to reduce sulfur emissions is to limit the presence of sulfur in fuel; to that end, AM/NS proposes to use only ultra-low sulfur diesel with 15 ppm sulfur content. They also considered use of clean fuel and good combustion practices. AM/NS did not define what good combustion practices would be, but they are required to maintain and operate their engines according to manufacturer specifications per Subpart IIII.

### **NEW SOURCE PERFORMANCE STANDARDS (NSPS)**

40 CFR Part 60 Subpart IIII is applicable to all stationary diesel-fueled engines manufactured after 2007. All of the proposed engines will be new models and therefore subject to NSPS IIII.

Per §60.4202(a) via §60.4205(b), the diesel engines must meet the NMHC+NO<sub>x</sub>, CO, and PM standards specified in Table 1 of §89.112 for engines of the same size range and model year. The 2,680 hp and 3,618 hp engines must limit NMHC+NO<sub>x</sub> to 4.77 g/hp-hr, and the 335 hp engines must limit NMHC+NO<sub>x</sub> to 2.98 g/hp-hr. All of the engines must limit CO emissions to 2.61 g/hp-hr and PM emissions to 0.15 g/hp-hr.

Additionally, Subpart IIII imposes Part 89 and Part 1039's opacity standards to all the engines but the fire pump engines, per §60.4202(a) via §60.4205(b). §89.113 and §1039.105 both state that the engines' emissions may not exceed 20% opacity during acceleration mode, 15% during lugging mode, and 50% during peaks in either mode. These limits neither override nor replace ADEM Admin. Code r. 335-3-4-.01(1).

All engines must be Tier 2 or 3 certified, depending on maximum engine power, to meet the applicable emission limits of §60.4202(a) via §60.4205(b) [§60.4211(c)]. The engines must be installed and configured according to the manufacturer's specifications [§60.4211(a)], and they must be operated and maintained according to the manufacturer's instructions [§60.4206]. The engines must be equipped with a non-resettable hour meter [§60.4209(a)]. The engines must use diesel fuel that meets the requirements of 40 CFR §80.510(b) [§60.4207(b)].

To qualify as and to show compliance as an emergency engine with respect to Subpart IIII, the following conditions under §60.4211(f) must be met: An emergency stationary engine must operate less than 100 hours per calendar year during recommended maintenance, during periods of Emergency Alert Level 2 declared by NERC, during periods where the utility company deviates greater than 5% from standard voltage or frequency, and during periods where the operator supplies power back to the grid (this being further limited to 50 hrs/yr). There is no time limit on the use of emergency stationary ICE in emergency situations imposed by NSPS IIII, though as discussed, the engines are subject to a BACT limit of 100 hrs/yr under all circumstances.

The recordkeeping requirements of §60.4214(a)-(e) do not apply to AM/NS's emergency diesel engines. By being certified and maintained according to manufacturer instructions, the emergency diesel engines meet the requirements of non-emergency engines, and §60.4214(b) does not require that each engine's operating hours and reason to operate be recorded if the engines meet the requirements of non-emergency engines. The model year 2009 engines are also exempted from this rule. However per ADEM Admin. Code r. 335-3-



15-.05(c), the Department will include a requirement to record operating hours for each engine without that exemption, to ensure sufficient data to determine yearly air emissions from the facility.

**NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP)**

40 CFR Part 63 Subpart ZZZZ is applicable to all stationary diesel-fueled engines; however §63.6590 enumerates exceptions for new engines subject to NSPS standards. Per §63.6590(b)(1)(i), AM/NS must submit an initial notification for the 2,680 hp and 3,618 hp engines meeting the requirements of §63.6645(f) and must thereafter remain in compliance with NSPS IIII. Per §63.6590(c), for the 335 hp engines, AM/NS complies with NESHAP ZZZZ by complying with NSPS IIII.

## AIR QUALITY ANALYSIS

An applicant for a PSD permit is required to conduct an air quality analysis of the ambient impacts associated with the construction and operation of the proposed new sources or modification. The main purpose of the air quality analysis is to demonstrate that new emissions from a proposed major stationary source or major modification will not cause or contribute to a violation of any applicable National Ambient Air Quality Standards (NAAQS) or PSD increment. Ambient impacts of non-criteria pollutants must also be evaluated. Generally, the analysis will include (1) an assessment of existing air quality, which may include ambient monitoring data and air quality dispersion modeling results, and (2) predictions, using dispersion modeling, of ambient concentrations that will result from the applicant's proposed project and future growth associated with the project.

### National Ambient Air Quality Standards (NAAQS)

The NAAQS are maximum concentration "ceilings" measured in terms of the total concentration of a pollutant in the atmosphere. The following table presents the applicable standards for the pollutants under PSD review:

<b><u>Pollutant/Averaging Time</u></b>	<b><u>Primary Standard</u></b>	<b><u>Secondary Standard</u></b>
<b>Particulate Matter (&lt; 10 µm) (PM<sub>10</sub>)</b>		
PM <sub>10</sub> , 24-hour	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
<b>Particulate Matter (&lt; 2.5 µm) (PM<sub>2.5</sub>)</b>		
PM <sub>2.5</sub> , Annual	12 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>
PM <sub>2.5</sub> , 24-hour	35 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>		
SO <sub>2</sub> , 1-hour	75 ppb	---
SO <sub>2</sub> , 3-hour	---	0.5 ppm
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>		
NO <sub>2</sub> , Annual	53 ppb	53 ppb
NO <sub>2</sub> , 1-hour	100 ppb	---
<b>Carbon Monoxide (CO)</b>		
CO, 1-hour	35 ppm	---
CO, 8-hour	9 ppm	---

A complete review of the air quality analysis can be found in Attachment No. 1. As can be seen from the review, all of the predicted pollutant concentrations are less than the NAAQS, and the NAAQS for each pollutant are not expected to be exceeded.

The PSD requirements provide for a system of area classifications which affords an opportunity to identify local land use goals. There are three area classifications. Each

classification differs in terms of the amount of growth it would permit before significant air quality deterioration would be deemed to occur. Class I areas have the smallest increments and thus allow only a small degree of air quality deterioration. Class II areas can accommodate normal, well-managed industrial growth. Class III areas have the largest increments and thereby provide for a larger amount of development than either Class I or Class II areas. Presently, there are no Class III areas in Alabama. The table below shows the pollutants and associated Class I and II PSD increments.

<b><u>Pollutant</u></b>	<b><u>Averaging Period</u></b>	<b><u>Class I (<math>\mu\text{g}/\text{m}^3</math>)</u></b>	<b><u>Class II (<math>\mu\text{g}/\text{m}^3</math>)</u></b>
PM	Annual	5	19
PM	24-hour	10	37
PM <sub>10</sub>	Annual	4	17
PM <sub>10</sub>	24-hour	8	30
PM <sub>2.5</sub>	Annual	1	5
PM <sub>2.5</sub>	24-hour	2	9
SO <sub>2</sub>	Annual	2	20
SO <sub>2</sub>	24-hour	5	91
SO <sub>2</sub>	3-hour	25	512
NO <sub>2</sub>	Annual	2.5	25

The following is a brief synopsis of each class area and how it relates to this project:

#### Class I Areas:

Class I Areas have the smallest increments and thus allow only a small degree of air quality deterioration. Air Permit application forms submitted by AM/NS document that the closest Class I Area, the Breton Wildlife Refuge, is approximately 130 km away from the facility. However, the Federal Land Managers (FLM) require sources to submit Class I modeling if their SO<sub>2</sub>, NO<sub>x</sub>, and PM<sub>10</sub> emissions in TPY divided by the distance in kilometers are greater than 10; by this criterion, AM/NS must submit to the Breton Wildlife Refuge FLM and have submitted duplicate copies to ADEM as a courtesy. In addition to the Class I increment analysis, modeling was performed to address the impacts on regional haze and other air quality values. Attachment No. 1 provides a review of the Class I Area analysis. The predicted impacts on regional haze and other air quality values at the Breton Wildlife Refuge are below the levels recommended by the FLM.

#### Class II Areas:

Class II areas can accommodate normal well-managed industrial growth. AM/NS is located in a Class II Area. Attachment No. 1 provides a review of the PSD Class II increment analysis. A Class II increment has not been established for either the NO<sub>2</sub> 1-

hour averaging period or the SO<sub>2</sub> 1-hour averaging period; therefore, no Class II increment modeling was performed.

#### Class III Areas:

Class III areas have the largest increments and thereby provide for a larger amount of development than either Class I or Class II areas. Presently, there are no Class III areas in the state of Alabama. Therefore, no Class III area analysis was performed for this project.

### **ADDITIONAL IMPACT ANALYSIS**

All PSD permit applicants must prepare an additional impact analysis, for each pollutant subject to regulation, which would be emitted by the proposed new source or modification. This analysis assesses the impacts of air, ground, and water pollution on soils, vegetation, and visibility caused by an increase in emissions and from associated growth. The additional impact analysis generally has three parts:

- (a) Growth
- (b) Soils and Vegetation
- (c) Visibility Impairment

#### **Growth**

Since the mill is an existing source, AM/NS's proposed construction changes will have a minimal impact on the anticipated growth in the area. Commercial growth is anticipated to occur at a gradual rate in the future.

#### **Soils and Vegetation**

The project is not expected to have a significant impact on the surrounding soil. Modeled impacts of annual NO<sub>2</sub> are less than the significant impact level (SIL). In summary, the project is not expected to result in significant impact on soil, vegetation, or wildlife in the area surrounding the facility.

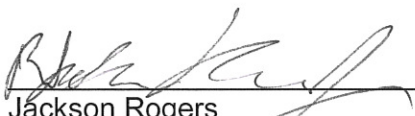
#### **Visibility Impairment**

As part of the NSPS for electric arc furnaces, AM/NS is required to comply with opacity standards. Opacity limits are also imposed on other sources at the mill. These limits reduce the events of visible plumes; thus visibility impacts in the immediate vicinity of the mill should be negligible; therefore, no visibility analyses were required.

## RECOMMENDATION

Based on the above analysis, I recommend that, upon receiving permitting fees and pending the completion of the appropriate public comment period, the following Air Permits be issued with the attached provisos (see Attachment 2):

503-0095-X038	Meltshop #1, including: <ul style="list-style-type: none"><li>• S64 – 331 TPH Electric Arc Furnace, Ladle Metallurgy Furnace, and Continuous Caster controlled by Meltshop Baghouse #1</li><li>• S65 – Continuous Caster Steam Vent #1</li></ul>
503-0095-X039	Meltshop #2, including: <ul style="list-style-type: none"><li>• S68 – 331 TPH Electric Arc Furnace, Ladle Metallurgy Furnace, and Continuous Caster controlled by Meltshop Baghouse #1</li><li>• S69 – Continuous Caster Steam Vent #2</li></ul>
503-0095-X040	S66 – Ruhrstahl-Heraeus Degassing Operations with Flare S70 – Vacuum Tank Degassing Operations with Flare
503-0095-X041	Seven (7) Emergency Diesel Engines <ul style="list-style-type: none"><li>• Three (3) 3,618 hp Engines (SXX-13 – SXX-15)</li><li>• Two (2) 2,680 hp Engines (SXX-9 and SXX-11)</li><li>• Two (2) 335 hp Engines (SXX-10 and SXX-12)</li></ul>
503-0095-X042	Slag Processing Operations
503-0095-X043	S67 – Scarfing Operations with Wet Electrostatic Precipitator

  
Jackson Rogers  
Industrial Minerals Section  
Energy Branch  
Air Division

01-20-21  
Date

**ATTACHMENT NO. 1**  
*Air Quality Analysis*



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January 12, 2021

**MEMORANDUM**

TO: Jackson Rogers *RJR*  
Industrial Minerals Section  
Energy Branch  
Air Division

FROM: Jim Owen *JMO*  
Meteorological Section  
Planning Branch  
Air Division

SUBJECT: Air Dispersion Modeling of proposed modifications at the AM/NS facility  
in Mobile County, Alabama.

ADEM has completed its review of an air quality modeling analysis performed by ERM on behalf of AM/NS Calvert, L.L.C. (AM/NS). AM/NS proposes to construct two new melt shops and auxiliary sources, as well as increase the stack heights of four existing sources, at their carbon steel mill in Calvert, Alabama. The purpose of this analysis was to assess the impacts on air quality from emissions of carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), particulate matter with an aerodynamic diameter less than 2.5 microns (PM<sub>2.5</sub>), particulate matter with an aerodynamic diameter less than 10 microns (PM<sub>10</sub>), and sulfur dioxide (SO<sub>2</sub>) from the proposed modifications. An air quality analysis was performed for CO, Pb, NO<sub>2</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, and SO<sub>2</sub> to demonstrate that emissions from the proposed modifications will not cause or contribute to a violation of any applicable National Ambient Air Quality Standard (NAAQS) or PSD Increment.

**AIR QUALITY MODELS:**

The American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), version 19191, was used in default mode for modeling all pollutants, except NO<sub>2</sub>. The NO<sub>2</sub> modeling was performed using the Tier 3 non-default Ozone-Limiting Method (OLM) option in AERMOD.



**METEOROLOGICAL DATA:**

Surface and upper air meteorological data for the years 2014-2018 was used in all modeling. The surface data was from the Mobile, AL National Weather Service Office (NWS) and the upper air data was from the Slidell, LA NWS. A surface characteristics analysis was performed by ERM to determine if the surface characteristics around AM/NS are similar to the surface characteristics around the Mobile, AL NWS. As a result of this analysis, ADEM required ERM to utilize the surface characteristics around both the Mobile, AL NWS and the AM/NS facility in all modeling and retain the higher of the two concentrations for all applicable averaging periods.

**GOOD ENGINEERING PRACTICE ANALYSIS:**

A Good Engineering Practice (GEP) Analysis was performed to assess possible building downwash effects. It was determined that all the stacks that were modeled are within the influence area (5L) of one or more of the controlling buildings and have heights less than the GEP stack height. Therefore, building downwash was considered for those sources in the modeling.

**SCREENING MODELING & PRECONSTRUCTION MONITORING:**

Screening modeling was performed for all pollutants at AM/NS. Appendix A of this memo lists the stack parameters and emission rates for the proposed new sources at AM/NS that were used in the modeling.

Two Cartesian receptor grids were used in the modeling analysis. One extended out to 10 kilometers (km) and a second receptor grid for 1 hour NO<sub>2</sub> and SO<sub>2</sub> extended out to 20 km. The 20 km grid was required since the predicted concentrations of 1 hour NO<sub>2</sub> and SO<sub>2</sub> for the screening modeling were increasing beyond 10 km. The receptor grids were generated using the following:

- (1.) 50 meter (m) spacing along the fence line.
- (2.) 100 m spacing from fence line out to 5 km.
- (3.) 250 m spacing from 5 km to 7 km.
- (4.) 500 m spacing from 7 km to 10 km.
- (5.) 1 km spacing from 10 km to 20 km.

All maximum predicted concentrations for all pollutants for all averaging periods were resolved to within 100-meter receptor spacing. Receptor terrain elevations were generated using the EPA AERMAP program.

Table 1 lists the results of screening modeling performed for CO, Pb, NO<sub>2</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, and SO<sub>2</sub>.



**TABLE 1**  
**Screening Modeling Results**

Pollutant	Averaging Period	Max Conc. ( $\mu\text{g}/\text{m}^3$ )	Signif. Level ( $\mu\text{g}/\text{m}^3$ )	SIA (km)
CO	1 hour	211.11 <sup>(a)</sup>	2000	-
CO	8 hour	150.39 <sup>(a)</sup>	500	-
Pb	Month	0.00526	- <sup>(b)</sup>	-
NO <sub>2</sub>	1 hour	22.28 <sup>(c)</sup>	7.5	13.9
NO <sub>2</sub>	Annual	0.42 <sup>(d)</sup>	1	-
PM <sub>2.5</sub>	24 hour	8.06 <sup>(c)</sup>	1.2	6.5
PM <sub>2.5</sub>	Annual	1.41 <sup>(c)</sup>	0.3	3.5
PM <sub>10</sub>	24 hour	8.86 <sup>(a)</sup>	5	1.7
PM <sub>10</sub>	Annual	1.57 <sup>(d)</sup>	1	0.9
SO <sub>2</sub>	1 hour	24.04 <sup>(c)</sup>	7.8	14.4
SO <sub>2</sub>	3 hour	24.22 <sup>(a)</sup>	25	-
SO <sub>2</sub>	24 hour	12.45 <sup>(a)</sup>	5	1.75
SO <sub>2</sub>	Annual	0.28 <sup>(d)</sup>	1	-

(a) Based on high, first high concentration for all 5 years modeled together.

(b) There is no SIL for Lead. The predicted concentration based on the 3 month rolling average was compared against the Significant Monitoring Concentration of 0.15  $\mu\text{g}/\text{m}^3$ .

(c) Based on the five year average high, first high for all 5 years modeled together.

(d) Based on the maximum annual concentration for all 5 years modeled separately.

Results of the modeling indicated that the maximum predicted concentrations for the 1 hour and 8 hour CO, annual NO<sub>2</sub>, and 3 hour and annual SO<sub>2</sub> averaging periods were below their respective significance levels. Therefore further modeling of CO, annual NO<sub>2</sub>, and 3 hour and annual SO<sub>2</sub> was not required. However, the 1 hour NO<sub>2</sub>, 24 hour and annual PM<sub>2.5</sub> and PM<sub>10</sub>, and 1 hour and 24 hour SO<sub>2</sub> averaging periods were predicted to have concentrations greater than their significance levels. Therefore, further modeling of 1 hour NO<sub>2</sub>, 24 hour and annual PM<sub>2.5</sub> and PM<sub>10</sub>, and 1 hour and 24 hour SO<sub>2</sub> was required.

Also, during this initial screening modeling analysis, preconstruction monitoring requirements were addressed, and it was determined that preconstruction monitoring for all pollutants was not required.

#### **MERPs ANALYSIS:**

Precursor emission impacts to Ozone and PM<sub>2.5</sub> (secondary PM<sub>2.5</sub>) were considered and a Modeled Emission Rates for Precursors (MERPs) analysis was performed. The Ozone precursors are the pollutants VOC and NO<sub>x</sub>, and the precursor emissions of interest for secondary PM<sub>2.5</sub> are NO<sub>x</sub> and SO<sub>2</sub>. For secondary PM<sub>2.5</sub>, the following total emissions were considered: for NO<sub>x</sub>, 695.27 TPY; and for SO<sub>2</sub>, 675.24 TPY. For Ozone, the following total emissions were considered: for VOC, 260.16 TPY; and for NO<sub>x</sub>, 695.27 TPY. The results for the MERPs analyses are presented in Table 2.

**TABLE 2**  
**MERPs Analysis Results**

Pollutant	Results
Secondary PM <sub>2.5</sub> (Daily)	28%
Secondary PM <sub>2.5</sub> (Annual)	4%
Ozone	215%

These results show that the MERPs values for secondary PM<sub>2.5</sub> are below 100%. However, since the screening modeling showed that predicted concentrations for PM<sub>2.5</sub> were above the significance levels, secondary PM<sub>2.5</sub> impacts were added to primary PM<sub>2.5</sub> impacts for both the NAAQS and Class II Increment. Also, the results show that the MERPs for ozone are above 100%. Since the calculated consumption is over 100%, a cumulative analysis is required. A review of regional monitors in the southern Alabama region is necessary to determine if the 215%, or 2.15 ppb (based on the proposed ozone SIL of 1 ppb), were to be added to the ozone background that the sum would be less than the ozone NAAQS of 70 ppb. Based on the EPA Ward monitor located in Sumter county the addition of 2.15 ppb of ozone from the MERPs analysis added to the Ward monitor's 8 hour design value of 56.3 ppb gives a total of 58.45 ppb. This is less than the standard of 70 ppb and thus demonstrates passing the Tier 1 assessment for ozone. For the complete MERPS calculations, please see the application.

#### REFINED MODELING:

##### NAAQS ANALYSIS:

When modeling for the NAAQS, all proposed and existing emission sources at AM/NS and other nearby facilities were included. Results of the PM<sub>2.5</sub> NAAQS modeling are found in Table 3. Results of NO<sub>2</sub>, Pb, PM<sub>10</sub>, and SO<sub>2</sub> NAAQS modeling are found in Table 4.

**TABLE 3**  
**PM<sub>2.5</sub> NAAQS Modeling Results**

Averaging Period	Predicted Conc. (µg/m <sup>3</sup> )	Secondary PM <sub>2.5</sub> (µg/m <sup>3</sup> )	Back-ground (µg/m <sup>3</sup> )	Total Conc. (µg/m <sup>3</sup> )	NAAQS (µg/m <sup>3</sup> )	% of NAAQS
24 hour	16.93 <sup>(a)</sup>	0.34	17	34.27	35	98
Annual	4.14 <sup>(b)</sup>	0.007	7.3	11.45	12	95

(a) Average of the eighth highest value from each year.

(b) Average of the highest value from each year.

**TABLE 4**  
**NO<sub>2</sub>, Pb, PM<sub>10</sub>, and SO<sub>2</sub> NAAQS Modeling Results**

Pollutant	Averaging Period	Predicted Conc. (µg/m <sup>3</sup> )	Back-ground (µg/m <sup>3</sup> )	Total Conc. (µg/m <sup>3</sup> )	NAAQS (µg/m <sup>3</sup> )	% of NAAQS
NO <sub>2</sub>	1 hour	2,759.49 <sup>(a)</sup>	31	2,790.49	188	1,484
Pb	Month	0.00526 <sup>(b)</sup>	-	0.00526	0.15	4
PM <sub>10</sub>	24 hour	15.61 <sup>(c)</sup>	25	40.61	150	27
SO <sub>2</sub>	1 hour	294.43 <sup>(d)</sup>	29	323.43	196	165

(a)Average of the eighth highest value from each year.

(b)Rolling three month average value.

(c)Sixth highest value over 5 years.

(d)Average of the fourth highest value from each year.

As shown in Tables 3 and 4, there are no predicted violations of the 24 hour and annual PM<sub>2.5</sub>, rolling 3 month Lead, and 24 hour PM<sub>10</sub> NAAQS. However, there were predicted violations of the 1 hour NO<sub>2</sub> and SO<sub>2</sub> NAAQS. A culpability analysis was performed for both 1 hour NO<sub>2</sub> and SO<sub>2</sub> using MAXDCONT values generated by AERMOD. The results of this analysis showed that the proposed modifications at AM/NS did not cause or significantly contribute to any of the predicted violations.

#### CLASS II INCREMENT ANALYSIS:

When modeling for the Class II Increment, all proposed and existing emission sources at AM/NS and other nearby facilities were included. Results of the PM<sub>2.5</sub> Class II Increment modeling are found in Table 5. Results of the PM<sub>10</sub> and SO<sub>2</sub> Class II Increment are found in Table 6.

**TABLE 5**  
**PM<sub>2.5</sub> Class II Increment Analysis**

Averaging Period	Predicted Conc. (µg/m <sup>3</sup> )	Secondary PM <sub>2.5</sub> (µg/m <sup>3</sup> )	Total Conc. (µg/m <sup>3</sup> )	Increment (µg/m <sup>3</sup> )	% of Increment
24 hour	8.48 <sup>(a)</sup>	0.34	8.82	9	98
Annual	1.52 <sup>(b)</sup>	0.007	1.53	4	38

(a)Highest 2nd High value from each of the five years was used.

(b)Highest 1st High value from each of the five years was used.

**TABLE 6**  
**PM<sub>10</sub> and SO<sub>2</sub> Class II Increment Analyses**

Pollutant	Averaging Period	Predicted Conc. (µg/m <sup>3</sup> )	Increment (µg/m <sup>3</sup> )	% of Increment
PM <sub>10</sub>	24 hour	14.29 <sup>(a)</sup>	30	48
PM <sub>10</sub>	Annual	2.21 <sup>(b)</sup>	17	13
SO <sub>2</sub>	24 hour	7.86 <sup>(a)</sup>	91	9

(a) Highest 2nd High value from each of the 5 years was used.

(b) Highest 1st High value from each of the 5 years was used.

As shown in Table 5 and Table 6, there are no predicted violations of the PM<sub>2.5</sub>, PM<sub>10</sub>, and SO<sub>2</sub> Class II Increments for any averaging period.

### **CLASS I AREA MODELING:**

The nearest Class I area to AM/NS is the Breton National Wildlife Refuge (located 130 km south-southwest from AM/NS). ADEM did not require a Class I analysis, however, ERM notified Fish and Wildlife Service for Breton of this project and was told that an Air Quality Related Values (AQRV) analysis was warranted due to the fact that their annual Q/d value is 20.86.

A deposition analysis was performed for nitrogen and sulfur. In this analysis, AM/NS's contribution to the deposition of chemical species in the Class I area were evaluated against values recommended by the Federal Land Manager (FLM). The maximum predicted nitrogen and sulfur deposition values are shown in Table 7.

**TABLE 7**  
**Sulfur and Nitrogen Deposition**

Pollutant	Maximum Predicted Impact (Kg/Ha/Yr)	Screening Value (Kg/Ha/Yr)
Nitrogen (as Nitrate)	0.0012	0.01
Sulfur (as Sulfate)	0.0072	0.01

The results of the deposition analysis shows that the maximum predicted nitrogen and sulfur deposition impacts are below the threshold screening values recommended by the FLM. Therefore, no further analysis was required.

AM/NS's contribution to regional haze was also addressed, per the FLAG report. Results of the regional haze analysis showed that the highest visibility change from the project was predicted to be 3.29%. Therefore, the threshold of 5% was never exceeded. As a result, no further analysis was required.

### **CONCLUSION:**

In conclusion, emissions of CO, Pb, NO<sub>2</sub>, PM<sub>2.5</sub>, PM<sub>10</sub> and SO<sub>2</sub> from the proposed modifications at the AM/NS facility in Calvert, Alabama, are not expected to cause or

significantly contribute to a violation of a NAAQS or Class II Increment. Also, predicted impacts on regional haze, as well as nitrogen and sulfur deposition, at the Breton National Wildlife Refuge are below the levels recommended by the FLM.



## **APPENDIX A**

### **Stack Parameters and Emission Rates For Proposed New AM/NS Sources**

Table of Emissions and Stack Parameters for AM/NS Proposed Project Sources

Source	PM <sub>10</sub> g/s	PM <sub>2.5</sub> g/s	CO g/s	SO <sub>2</sub> g/s	NO <sub>x</sub> g/s	Pb g/s	UTM East (m)	UTM North (m)	Stack Height (m)	Stack Temperature (K)	Stack Velocity (m/s)	Stack Diameter (m)
EAF 1 (short term)	7.82E+00	7.82E+00	9.17E+01	1.46E+01	1.46E+01	8.33E-02	406,745.97	3,446,703.76	61.00	391.48	23.03	6.50
EAF 1 (annual)	5.21E+00	5.21E+00	6.10E+01	9.71E+00	9.71E+00	5.55E-02						
EAF 2 (short term)	7.82E+00	7.82E+00	9.17E+01	1.46E+01	1.46E+01	8.33E-02	406,755.44	3,446,673.61	61.00	391.48	23.03	6.50
EAF 2 (annual)	5.21E+00	5.21E+00	6.10E+01	9.71E+00	9.71E+00	5.55E-02						
Degas Flare 1 (short term)	4.17E-02	4.17E-02	3.27E+00	1.15E-03	1.92E-01	9.61E-07	406,912.659	3,446,931.971	50.37	1,273.00	20.00	0.40
Degas Flare 1 (annual)	4.79E-02	4.79E-02	3.63E+00	1.41E-03	2.35E-01	1.18E-06						
Degas Flare 2 (short term)	3.20E-02	3.20E-02	3.16E+00	3.86E-04	6.43E-02	3.21E-07	406,748.059	3,446,958.779	54.69	1,273.00	20.00	0.30
Degas Flare 2 (annual)	7.44E-03	7.44E-03	7.24E-01	9.77E-05	1.63E-02	8.14E-03						
Contact Water Stack 1	4.33E-01	4.33E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	406,862.74	3,446,973.87	51.37	333.15	42.28	1.42
Contact Water Stack 2	4.33E-01	4.33E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	406,830.96	3,447,008.91	51.37	333.15	42.28	1.42
Scarfing ESP (short term)	1.94E+00	1.94E+00	3.67E-02	2.62E-04	4.37E-02	2.18E-07	406,920.41	3,447,158.30	65.00	333.15	20.00	2.20
Scarfing ESP (annual)	1.44E+00	1.44E+00	2.73E-02	1.95E-04	3.24E-02	1.62E-07						
Alloys Silo 1	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,021.72	3,446,746.95	18.14	Ambient	0.11	1.03
Alloys Silo 2	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,019.75	3,446,745.04	18.14	Ambient	0.11	1.03

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Air Dispersion Modeling Report

Source	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	SO <sub>2</sub>	NO <sub>x</sub>	Pb	UTM East (m)	UTM North (m)	Stack Height (m)	Stack Temperature (K)	Stack Velocity (m/s)	Stack Diameter (m)
	g/s	g/s	g/s	g/s	g/s	g/s						
Alloys Silo 3	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,017.67	3,446,743.03	18.14	Ambient	0.11	1.03
Alloys Silo 4	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,015.70	3,446,741.11	18.14	Ambient	0.11	1.03
Alloys Silo 5	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,013.63	3,446,739.10	18.14	Ambient	0.11	1.03
Alloys Silo 6	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,011.66	3,446,737.19	18.14	Ambient	0.11	1.03
Alloys Silo 7	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,019.63	3,446,749.05	18.14	Ambient	0.11	1.03
Alloys Silo 8	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,017.63	3,446,747.23	18.14	Ambient	0.11	1.03
Alloys Silo 9	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,015.55	3,446,745.21	18.14	Ambient	0.11	1.03
Alloys Silo 10	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,013.58	3,446,743.30	18.14	Ambient	0.11	1.03
Alloys Silo 11	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,011.50	3,446,741.29	18.14	Ambient	0.11	1.03
Alloys Silo 12	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,009.54	3,446,739.38	18.14	Ambient	0.11	1.03
Alloys Silo 13	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,015.35	3,446,753.51	18.14	Ambient	0.11	1.03
Alloys Silo 14	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,013.38	3,446,751.60	18.14	Ambient	0.11	1.03
Alloys Silo 15	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,011.30	3,446,749.59	18.14	Ambient	0.11	1.03
Alloys Silo 16	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,009.34	3,446,747.68	18.14	Ambient	0.11	1.03
Alloys Silo 17	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,007.26	3,446,745.66	18.14	Ambient	0.11	1.03
Alloys Silo 18	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,005.29	3,446,743.75	18.14	Ambient	0.11	1.03



REVENTION OF SIGNIFICANT DETERIORATION (PSD) PERMIT

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Source	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	SO <sub>2</sub>	NO <sub>x</sub>	Pb	UTM East (m)	UTM North (m)	Stack Height (m)	Stack Temperature (K)	Stack Velocity (m/s)	Stack Diameter (m)
	g/s	g/s	g/s	g/s	g/s	g/s						
Alloys Silo 19	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,013.23	3,446,755.70	18.14	Ambient	0.11	1.03
Alloys Silo 20	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,011.26	3,446,753.79	18.14	Ambient	0.11	1.03
Alloys Silo 21	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,009.18	3,446,751.77	18.14	Ambient	0.11	1.03
Alloys Silo 22	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,007.21	3,446,749.86	18.14	Ambient	0.11	1.03
Alloys Silo 23	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,005.14	3,446,747.85	18.14	Ambient	0.11	1.03
Alloys Silo 24	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,003.17	3,446,745.94	18.14	Ambient	0.11	1.03
DRI Silo 1	4.320E-03	4.320E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,087.43	3,446,800.69	27.43	Ambient	0.45	1.03
DRI Silo 2	4.320E-03	4.320E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,072.13	3,446,785.83	27.43	Ambient	0.45	1.03
DRI Silo 3	4.320E-03	4.320E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,056.82	3,446,770.97	27.43	Ambient	0.45	1.03
DRI Silo 4	4.320E-03	4.320E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,041.52	3,446,756.12	27.43	Ambient	0.45	1.03
DRI Silo 5	4.320E-03	4.320E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,072.58	3,446,815.99	27.43	Ambient	0.45	1.03
DRI Silo 6	4.320E-03	4.320E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,057.27	3,446,801.14	27.43	Ambient	0.45	1.03
DRI Silo 7	4.320E-03	4.320E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,041.97	3,446,786.28	27.43	Ambient	0.45	1.03
DRI Silo 8	4.320E-03	4.320E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,026.66	3,446,771.42	27.43	Ambient	0.45	1.03
LDB Silo 1	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,032.61	3,446,738.41	32.80	Ambient	0.11	1.03
LDB Silo 2	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,029.77	3,446,735.66	32.80	Ambient	0.11	1.03
LDB Silo 3	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,026.92	3,446,732.90	32.80	Ambient	0.11	1.03
LDB Silo 4	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,024.08	3,446,730.14	32.80	Ambient	0.11	1.03
LDB Silo 5	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,021.24	3,446,727.38	32.80	Ambient	0.11	1.03
LDB Silo 6	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,029.85	3,446,741.26	32.80	Ambient	0.11	1.03

ASSESSMENT OF SIGNIFICANT DETERIORATION (PSD) PERMIT  
APPLICATION  
Air Dispersion Modeling Report

Source	PM <sub>10</sub> g/s	PM <sub>2.5</sub> g/s	CO g/s	SO <sub>2</sub> g/s	NO <sub>x</sub> g/s	Pb g/s	UTM East (m)	UTM North (m)	Stack Height (m)	Stack Temperature (K)	Stack Velocity (m/s)	Stack Diameter (m)
LDB Silo 7	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,027.01	3,446,738.50	32.80	Ambient	0.11	1.03
LDB Silo 8	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,024.17	3,446,735.74	32.80	Ambient	0.11	1.03
LDB Silo 9	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,021.32	3,446,732.98	32.80	Ambient	0.11	1.03
LDB Silo 10	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,018.48	3,446,730.22	32.80	Ambient	0.11	1.03
Flux Silo 1	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	406,986.71	3,446,739.69	17.25	Ambient	0.11	1.03
Flux Silo 2	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	406,981.68	3,446,744.88	17.25	Ambient	0.11	1.03
Flux Silo 3	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	406,976.75	3,446,749.95	17.25	Ambient	0.11	1.03
Flux Silo 4	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	406,972.16	3,446,754.69	17.25	Ambient	0.11	1.03
Flux Silo 5	1.080E-03	1.080E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	406,966.91	3,446,760.09	17.25	Ambient	0.11	1.03
HBI Silo 1	4.320E-03	4.320E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,039.55	3,446,733.01	15.54	Ambient	0.45	1.03
HBI Silo 2	4.320E-03	4.320E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,037.80	3,446,731.31	15.54	Ambient	0.45	1.03
HBI Silo 3	4.320E-03	4.320E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,033.87	3,446,727.49	15.54	Ambient	0.45	1.03
HBI Silo 4	4.320E-03	4.320E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	407,032.12	3,446,725.80	15.54	Ambient	0.45	1.03
BH Silo 1	4.83E-03	4.83E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	406,776.09	3,446,711.23	18.29	Ambient	0.51	1.03
BH Silo 2	4.83E-03	4.83E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	406,783.12	3,446,717.85	18.29	Ambient	0.51	1.03

**ATTACHMENT NO. 2**  
*Environmental Justice Analysis*

## **ENVIRONMENTAL JUSTICE ANALYSIS**

Using EPA's EJSCREEN mapping and screening tool, the Department analyzed the demographic makeup of the area within five miles of AM/NS Calvert. The five-mile radius area from the center of AM/NS Calvert primarily encompasses parts of Mobile and Washington Counties as well as portions of Baldwin and Clarke Counties. The EJSCREEN ACS Report breaks down the population by race, sex, age, education level, English-language proficiency, household income, housing status (owned or rented), and employment status, with separate reports for residents within a 1-mile radius, a 3-mile radius, and a 5-mile radius from the center of AM/NS Calvert.

Location: User-specified point center at 31.143546, -87.996134

Ring (buffer): 1-miles radius

Description: Air

Summary of ACS Estimates		2013 - 2017	
Population			29
Population Density (per sq. mile)			10
Minority Population			23
% Minority			78%
Households			14
Housing Units			18
Housing Units Built Before 1950			1
Per Capita Income			18,476
Land Area (sq. miles) (Source: SF1)			2.93
% Land Area			93%
Water Area (sq. miles) (Source: SF1)			0.21
% Water Area			7%
		2013 - 2017 ACS Estimates	Percent MOE (±)
<b>Population by Race</b>			
Total		29	100% 322
Population Reporting One Race		29	97% 810
White		7	22% 193
Black		21	72% 271
American Indian		1	3% 290
Asian		0	0% 34
Pacific Islander		0	0% 11
Some Other Race		0	0% 11
Population Reporting Two or More Races		1	3% 126
Total Hispanic Population		0	1% 35
Total Non-Hispanic Population		29	
White Alone		7	22% 193
Black Alone		21	72% 267
American Indian Alone		1	3% 276
Non-Hispanic Asian Alone		0	0% 34
Pacific Islander Alone		0	0% 11
Other Race Alone		0	0% 11
Two or More Races Alone		1	3% 126
<b>Population by Sex</b>			
Male		15	53% 194
Female		14	47% 210
<b>Population by Age</b>			
Age 0-4		2	5% 80
Age 0-17		5	18% 171
Age 18+		24	82% 257
Age 65+		4	14% 137

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2013 - 2017

Location: User-specified point center at 31.143546, -87.996134

Ring (buffer): 1-miles radius

Description: Air

	2013 - 2017 ACS Estimates	Percent	MOE (±)
<b>Population 25+ by Educational Attainment</b>			
Total	22	100%	209
Less than 9th Grade	1	5%	72
9th - 12th Grade, No Diploma	2	10%	161
High School Graduate	11	50%	131
Some College, No Degree	6	27%	80
Associate Degree	1	5%	61
Bachelor's Degree or more	2	8%	50
<b>Population Age 5+ Years by Ability to Speak English</b>			
Total	28	100%	305
Speak only English	28	99%	300
Non-English at Home <sup>1+2+3+4</sup>	0	1%	42
<sup>1</sup> Speak English "very well"	0	1%	35
<sup>2</sup> Speak English "well"	0	0%	22
<sup>3</sup> Speak English "not well"	0	0%	17
<sup>4</sup> Speak English "not at all"	0	0%	11
<sup>3+4</sup> Speak English "less than well"	0	0%	17
<sup>2+3+4</sup> Speak English "less than very well"	0	0%	26
<b>Linguistically Isolated Households*</b>			
Total	0	0%	17
Speak Spanish	0	0%	11
Speak Other Indo-European Languages	0	0%	11
Speak Asian-Pacific Island Languages	0	0%	13
Speak Other Languages	0	0%	11
<b>Households by Household Income</b>			
Household Income Base	14	100%	124
< \$15,000	2	16%	86
\$15,000 - \$25,000	3	25%	85
\$25,000 - \$50,000	3	21%	76
\$50,000 - \$75,000	3	19%	90
\$75,000 +	3	18%	68
<b>Occupied Housing Units by Tenure</b>			
Total	14	100%	124
Owner Occupied	10	73%	124
Renter Occupied	4	27%	92
<b>Employed Population Age 16+ Years</b>			
Total	24	100%	241
In Labor Force	12	50%	185
Civilian Unemployed in Labor Force	2	9%	51
Not In Labor Force	12	50%	188

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of anyrace.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)

\*Households in which no one 14 and over speaks English "very well" or speaks English only.

# EJSCREEN ACS Summary Report



Location: User-specified point center at 31.143546, -87.996134

Ring (buffer): 1-miles radius

Description: Air

	2013 - 2017 ACS Estimates	Percent	MOE (±)
<b>Population by Language Spoken at Home*</b>			
Total (persons age 5 and above)	N/A	N/A	N/A
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French	N/A	N/A	N/A
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	N/A	N/A	N/A
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Chinese	N/A	N/A	N/A
Japanese	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Other Asian	N/A	N/A	N/A
Tagalog	N/A	N/A	N/A
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	N/A	N/A	N/A
Total Non-English	N/A	N/A	N/A

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2013 - 2017.

\*Population by Language Spoken at Home is available at the census tract summary level and up.



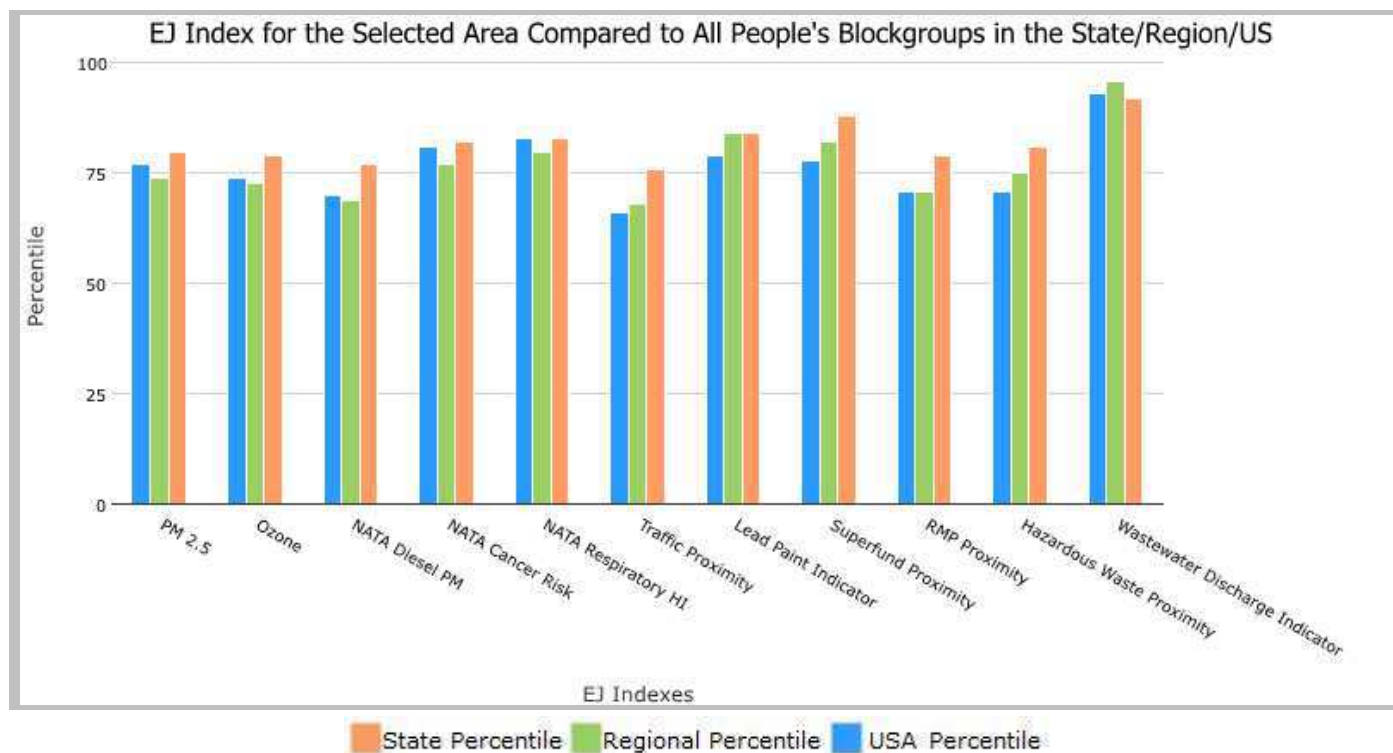
1 miles Ring Centered at 31.143546,-87.996134, ALABAMA, EPA Region 4

Approximate Population: 29

Input Area (sq. miles): 3.14

Air

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
<b>EJ Indexes</b>			
EJ Index for PM2.5	80	74	77
EJ Index for Ozone	79	73	74
EJ Index for NATA* Diesel PM	77	69	70
EJ Index for NATA* Air Toxics Cancer Risk	82	77	81
EJ Index for NATA* Respiratory Hazard Index	83	80	83
EJ Index for Traffic Proximity and Volume	76	68	66
EJ Index for Lead Paint Indicator	84	84	79
EJ Index for Superfund Proximity	88	82	78
EJ Index for RMP Proximity	79	71	71
EJ Index for Hazardous Waste Proximity	81	75	71
EJ Index for Wastewater Discharge Indicator	92	96	93



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

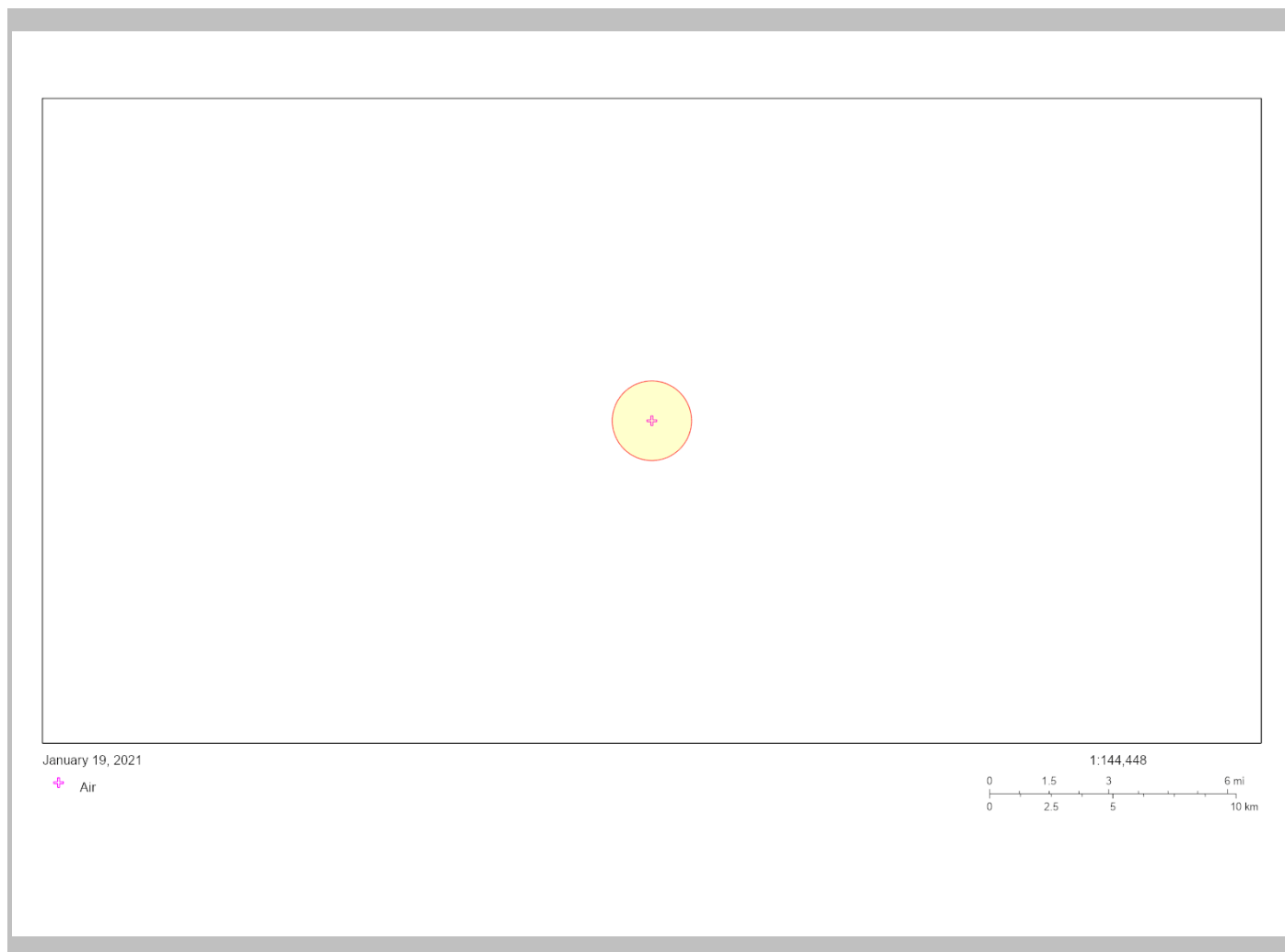


**1 miles Ring Centered at 31.143546,-87.996134, ALABAMA, EPA Region 4**

**Approximate Population: 29**

**Input Area (sq. miles): 3.14**

**Air**



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

## EJSCREEN Report (Version 2019)

1 miles Ring Centered at 31.143546,-87.996134, ALABAMA, EPA Region 4

Approximate Population: 29

Input Area (sq. miles): 3.14

### Air

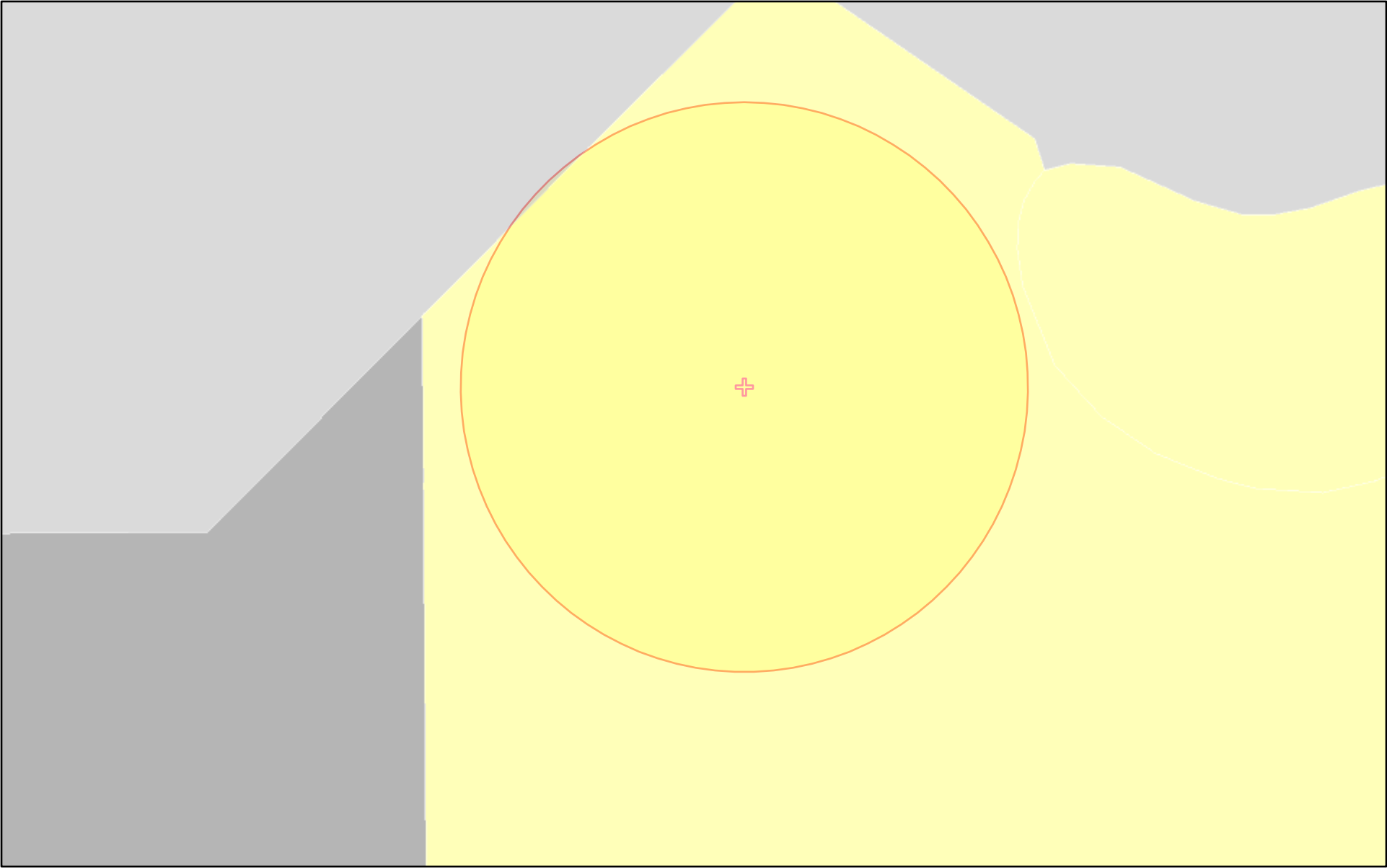
Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
<b>Environmental Indicators</b>							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$ )	8.85	9.75	19	8.59	58	8.3	67
Ozone (ppb)	36	41.2	5	40	23	43	13
NATA* Diesel PM ( $\mu\text{g}/\text{m}^3$ )	0.237	0.346	37	0.417	<50th	0.479	<50th
NATA* Cancer Risk (lifetime risk per million)	47	43	70	36	90-95th	32	95-100th
NATA* Respiratory Hazard Index	0.78	0.65	87	0.52	95-100th	0.44	95-100th
Traffic Proximity and Volume (daily traffic count/distance to road)	60	220	47	350	38	750	27
Lead Paint Indicator (% Pre-1960 Housing)	0.21	0.18	71	0.15	75	0.28	53
Superfund Proximity (site count/km distance)	0.073	0.054	80	0.083	70	0.13	55
RMP Proximity (facility count/km distance)	0.22	0.41	59	0.6	48	0.74	41
Hazardous Waste Proximity (facility count/km distance)	0.29	0.39	67	0.52	63	4	43
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.047	2.5	87	0.45	92	14	87
<b>Demographic Indicators</b>							
Demographic Index	63%	36%	84	38%	83	36%	84
Minority Population	78%	34%	87	38%	85	39%	82
Low Income Population	48%	39%	68	37%	70	33%	76
Linguistically Isolated Population	0%	1%	72	3%	51	4%	45
Population With Less Than High School Education	15%	15%	55	13%	61	13%	66
Population Under 5 years of age	5%	6%	48	6%	49	6%	46
Population over 64 years of age	14%	16%	43	16%	48	15%	52

\* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

For additional information, see: [www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice)

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

# Minority Population - 1 mile



January 14, 2021

Minority Population  
(National Percentiles)

Data not available

Less than 50 percentile

50 -60 percentile

60 -70 percentile

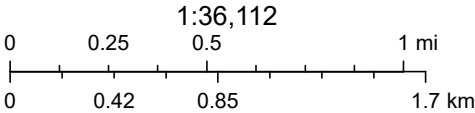
70 -80 percentile

80 - 90 percentile

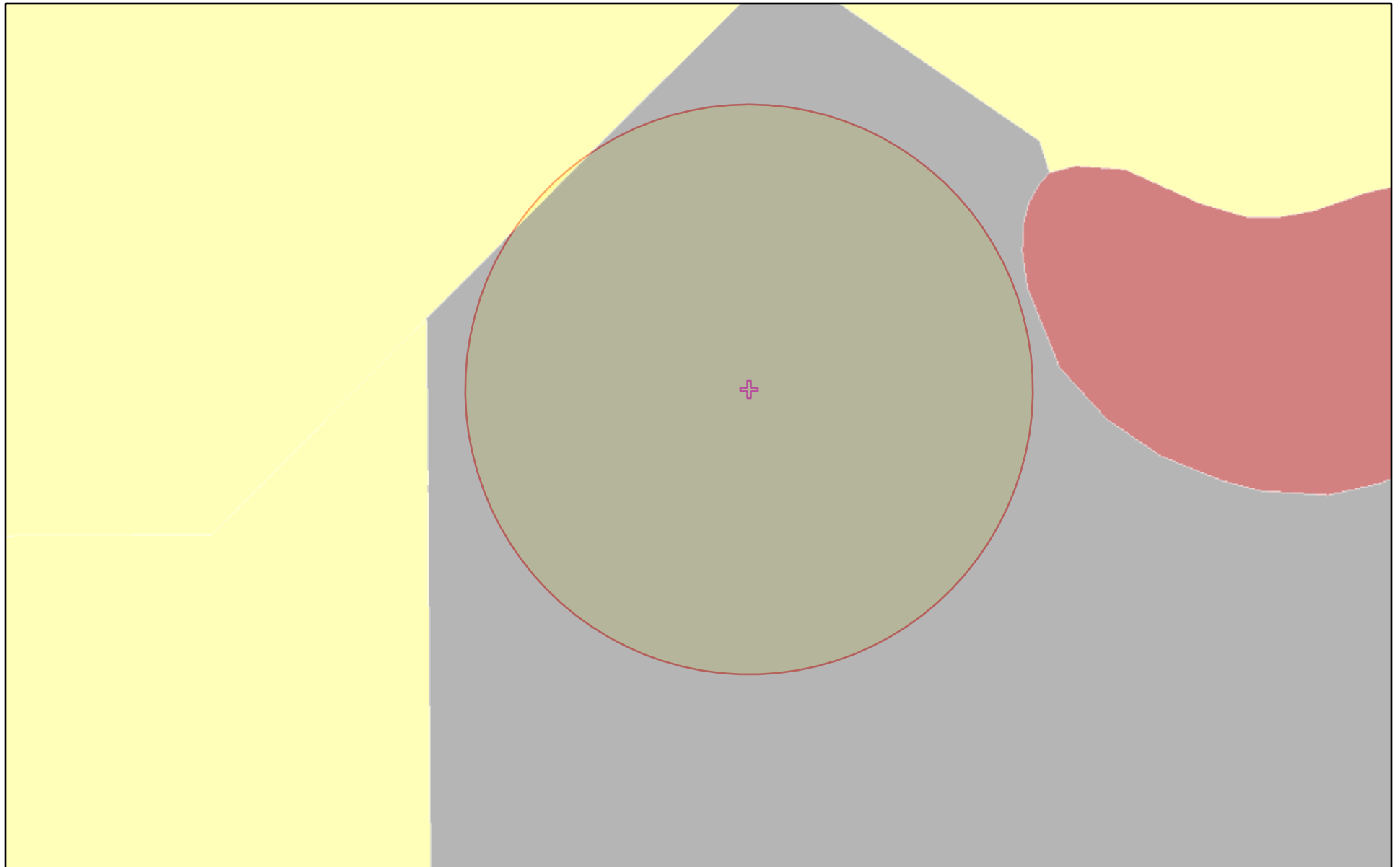
90 - 95 percentile

95 - 100 percentile

AM/NS Calvert



# Low Income Population - 1 mile



January 14, 2021

Low Income Population  
(National Percentiles)

□ Data not available

□ Less than 50 percentile

□ 50 -60 percentile

□ 60 -70 percentile

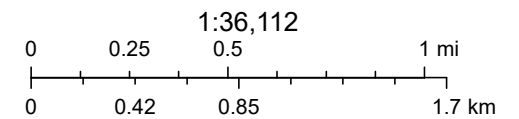
□ 70 -80 percentile

□ 80 - 90 percentile

□ 90 - 95 percentile

□ 95 - 100 percentile

✚ AM/NS Calvert



Location: User-specified point center at 31.143546, -87.996134

Ring (buffer): 3-miles radius

Description: Air

Summary of ACS Estimates		2013 - 2017	
Population		1,180	
Population Density (per sq. mile)		44	
Minority Population		588	
% Minority		50%	
Households		351	
Housing Units		462	
Housing Units Built Before 1950		35	
Per Capita Income		17,214	
Land Area (sq. miles) (Source: SF1)		26.88	
% Land Area		96%	
Water Area (sq. miles) (Source: SF1)		1.05	
% Water Area		4%	

	2013 - 2017 ACS Estimates	Percent	MOE (±)
<b>Population by Race</b>			
Total	1,180	100%	400
Population Reporting One Race	1,162	98%	1,011
White	592	50%	384
Black	416	35%	281
American Indian	152	13%	290
Asian	2	0%	34
Pacific Islander	0	0%	11
Some Other Race	0	0%	11
Population Reporting Two or More Races	18	2%	126
Total Hispanic Population	5	0%	35
Total Non-Hispanic Population	1,176		
White Alone	592	50%	384
Black Alone	412	35%	281
American Indian Alone	151	13%	276
Non-Hispanic Asian Alone	2	0%	34
Pacific Islander Alone	0	0%	11
Other Race Alone	0	0%	11
Two or More Races Alone	18	2%	126
<b>Population by Sex</b>			
Male	510	43%	229
Female	670	57%	277
<b>Population by Age</b>			
Age 0-4	81	7%	80
Age 0-17	325	27%	192
Age 18+	856	73%	342
Age 65+	166	14%	137

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2013 - 2017

Location: User-specified point center at 31.143546, -87.996134

Ring (buffer): 3-miles radius

Description: Air

	2013 - 2017 ACS Estimates	Percent	MOE (±)
<b>Population 25+ by Educational Attainment</b>			
Total	784	100%	305
Less than 9th Grade	88	11%	92
9th - 12th Grade, No Diploma	142	18%	161
High School Graduate	352	45%	244
Some College, No Degree	154	20%	112
Associate Degree	34	4%	61
Bachelor's Degree or more	48	6%	64
<b>Population Age 5+ Years by Ability to Speak English</b>			
Total	1,099	100%	377
Speak only English	1,093	99%	380
Non-English at Home <sup>1+2+3+4</sup>	6	1%	42
<sup>1</sup> Speak English "very well"	5	0%	35
<sup>2</sup> Speak English "well"	1	0%	22
<sup>3</sup> Speak English "not well"	0	0%	17
<sup>4</sup> Speak English "not at all"	0	0%	11
<sup>3+4</sup> Speak English "less than well"	0	0%	17
<sup>2+3+4</sup> Speak English "less than very well"	1	0%	26
<b>Linguistically Isolated Households*</b>			
Total	0	100%	17
Speak Spanish	0	0%	11
Speak Other Indo-European Languages	0	0%	11
Speak Asian-Pacific Island Languages	0	100%	13
Speak Other Languages	0	0%	11
<b>Households by Household Income</b>			
Household Income Base	351	100%	132
< \$15,000	52	15%	86
\$15,000 - \$25,000	58	16%	85
\$25,000 - \$50,000	129	37%	144
\$50,000 - \$75,000	59	17%	90
\$75,000 +	53	15%	72
<b>Occupied Housing Units by Tenure</b>			
Total	351	100%	132
Owner Occupied	256	73%	133
Renter Occupied	96	27%	92
<b>Employed Population Age 16+ Years</b>			
Total	934	100%	348
In Labor Force	375	40%	204
Civilian Unemployed in Labor Force	49	5%	102
Not In Labor Force	559	60%	300

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of anyrace.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)

\*Households in which no one 14 and over speaks English "very well" or speaks English only.

Location: User-specified point center at 31.143546, -87.996134

Ring (buffer): 3-miles radius

Description: Air

	2013 - 2017 ACS Estimates	Percent	MOE (±)
<b>Population by Language Spoken at Home*</b>			
Total (persons age 5 and above)	1,009	100%	426
English	993	98%	432
Spanish	1	0%	6
French	0	0%	11
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	5	1%	30
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	0	0%	11
Chinese	0	0%	11
Japanese	N/A	N/A	N/A
Korean	0	0%	11
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	2	0%	13
Other Asian	0	0%	11
Tagalog	4	0%	19
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	0	0%	11
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	3	0%	19
Total Non-English	16	2%	607

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2013 - 2017.

\*Population by Language Spoken at Home is available at the census tract summary level and up.

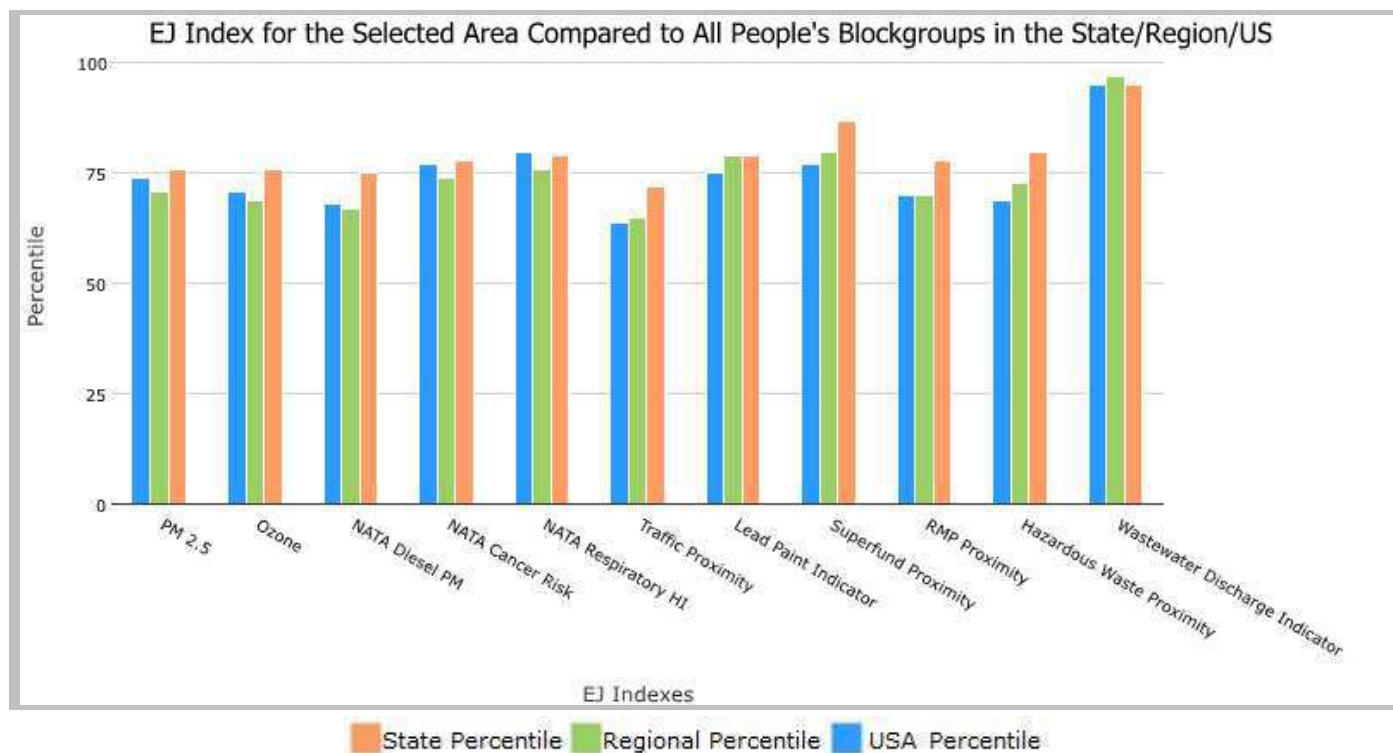
3 miles Ring Centered at 31.143546,-87.996134, ALABAMA, EPA Region 4

Approximate Population: 1,180

Input Area (sq. miles): 28.27

Air

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
<b>EJ Indexes</b>			
EJ Index for PM2.5	76	71	74
EJ Index for Ozone	76	69	71
EJ Index for NATA* Diesel PM	75	67	68
EJ Index for NATA* Air Toxics Cancer Risk	78	74	77
EJ Index for NATA* Respiratory Hazard Index	79	76	80
EJ Index for Traffic Proximity and Volume	72	65	64
EJ Index for Lead Paint Indicator	79	79	75
EJ Index for Superfund Proximity	87	80	77
EJ Index for RMP Proximity	78	70	70
EJ Index for Hazardous Waste Proximity	80	73	69
EJ Index for Wastewater Discharge Indicator	95	97	95



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

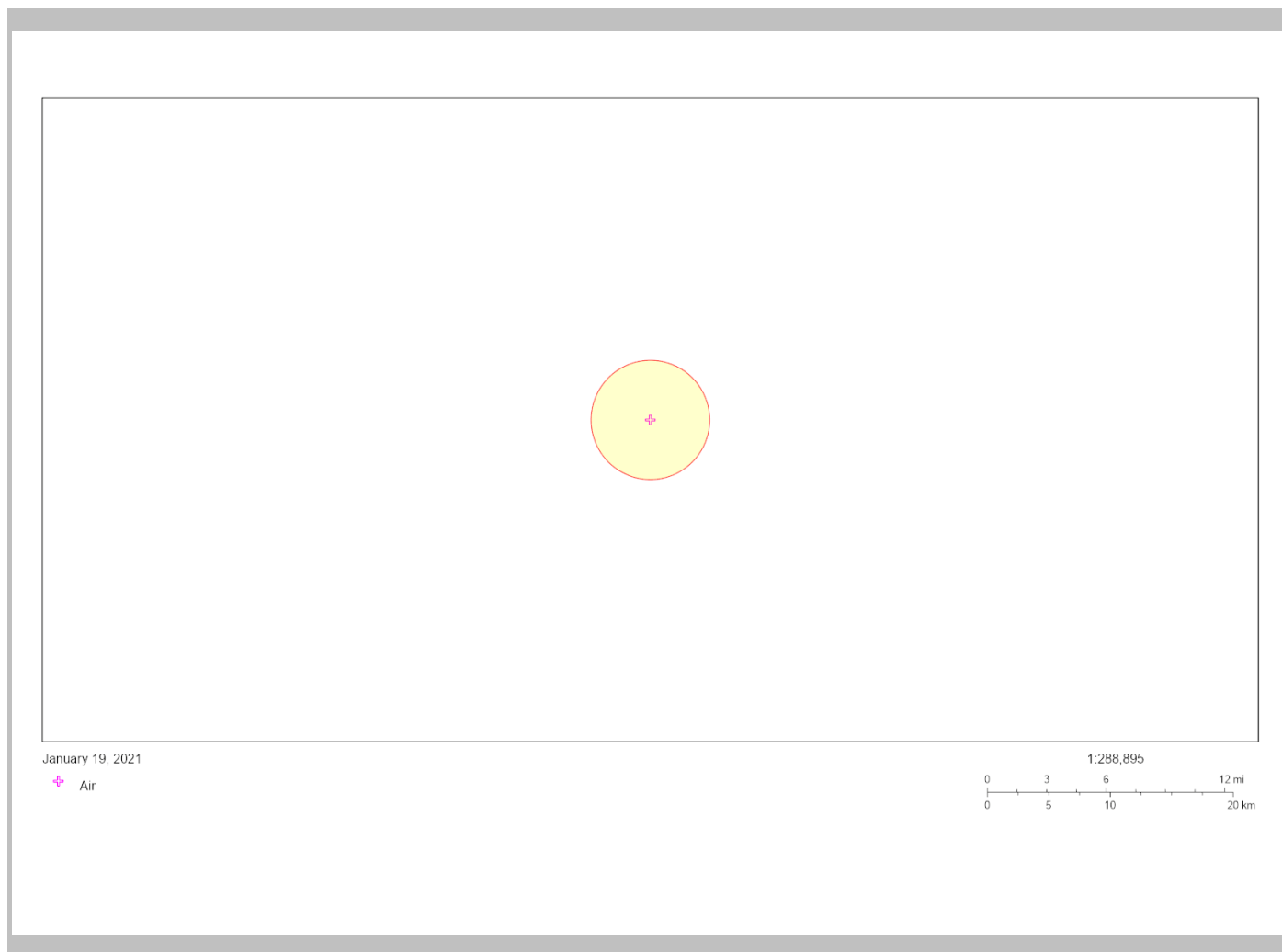


**3 miles Ring Centered at 31.143546,-87.996134, ALABAMA, EPA Region 4**

**Approximate Population: 1,180**

**Input Area (sq. miles): 28.27**

**Air**



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	2

## EJSCREEN Report (Version 2019)

3 miles Ring Centered at 31.143546,-87.996134, ALABAMA, EPA Region 4

Approximate Population: 1,180

Input Area (sq. miles): 28.27

### Air

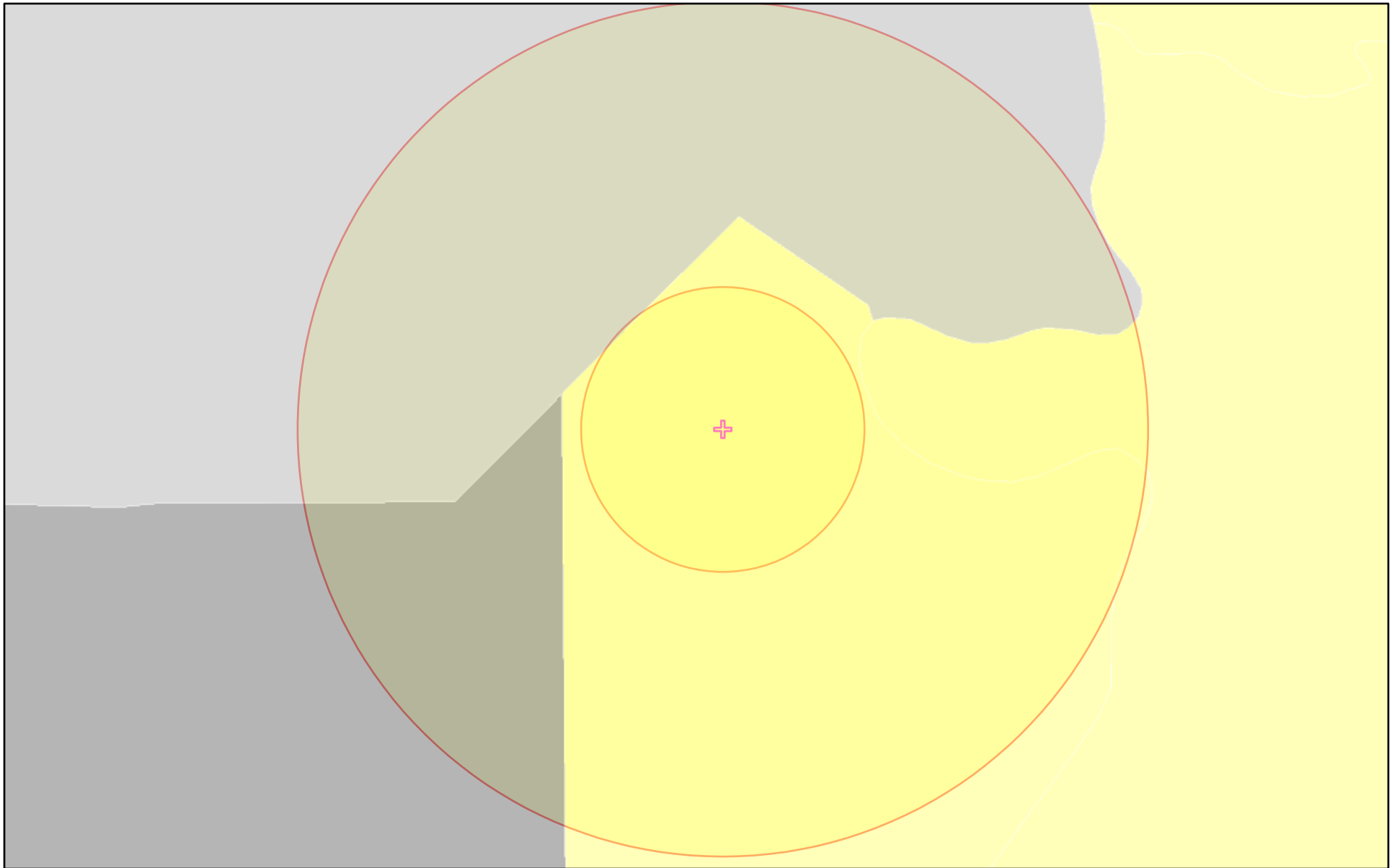
Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
<b>Environmental Indicators</b>							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$ )	8.84	9.75	19	8.59	58	8.3	66
Ozone (ppb)	35.6	41.2	3	40	20	43	12
NATA* Diesel PM ( $\mu\text{g}/\text{m}^3$ )	0.232	0.346	35	0.417	<50th	0.479	<50th
NATA* Cancer Risk (lifetime risk per million)	47	43	70	36	90-95th	32	95-100th
NATA* Respiratory Hazard Index	0.77	0.65	85	0.52	95-100th	0.44	95-100th
Traffic Proximity and Volume (daily traffic count/distance to road)	34	220	36	350	28	750	20
Lead Paint Indicator (% Pre-1960 Housing)	0.14	0.18	57	0.15	65	0.28	45
Superfund Proximity (site count/km distance)	0.086	0.054	84	0.083	75	0.13	61
RMP Proximity (facility count/km distance)	0.28	0.41	66	0.6	54	0.74	48
Hazardous Waste Proximity (facility count/km distance)	0.32	0.39	69	0.52	66	4	44
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.25	2.5	92	0.45	96	14	92
<b>Demographic Indicators</b>							
Demographic Index	50%	36%	75	38%	72	36%	74
Minority Population	50%	34%	74	38%	68	39%	66
Low Income Population	51%	39%	71	37%	73	33%	79
Linguistically Isolated Population	0%	1%	72	3%	51	4%	45
Population With Less Than High School Education	29%	15%	90	13%	91	13%	89
Population Under 5 years of age	7%	6%	64	6%	64	6%	61
Population over 64 years of age	14%	16%	44	16%	49	15%	53

\* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

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# Minority Population - 3 mile



January 14, 2021

Minority Population  
(National Percentiles)

Data not available

Less than 50 percentile

50 -60 percentile

60 -70 percentile

70 -80 percentile

80 - 90 percentile

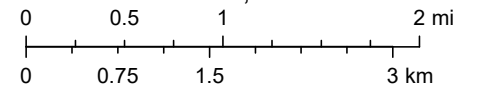
90 - 95 percentile

95 - 100 percentile

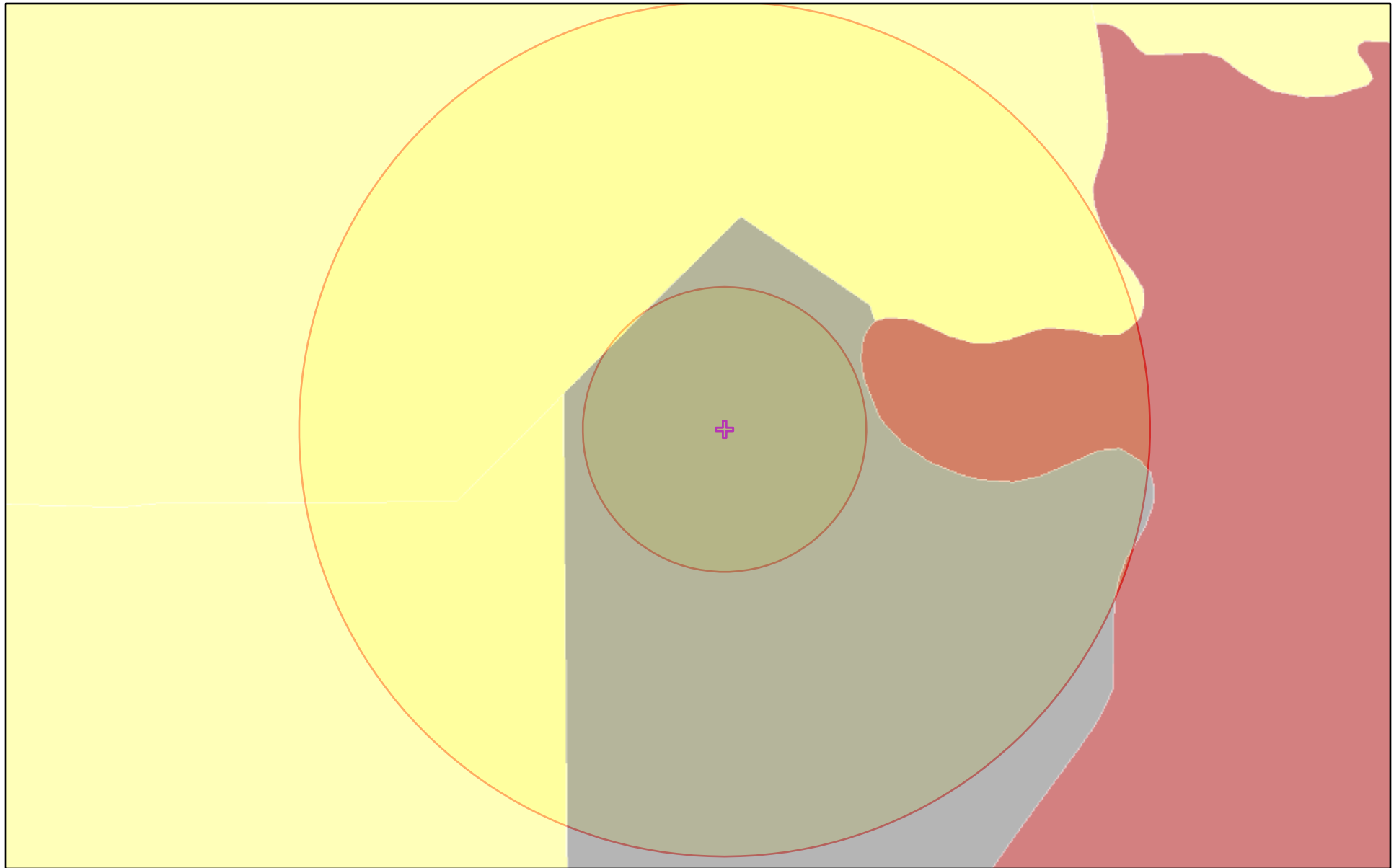
AM/NS Calvert

AM/NS Calvert

1:72,224



# Low Income Population - 3 mile



January 14, 2021

Low Income Population  
(National Percentiles)

Data not available

Less than 50 percentile

50 -60 percentile

60 -70 percentile

70 -80 percentile

80 - 90 percentile

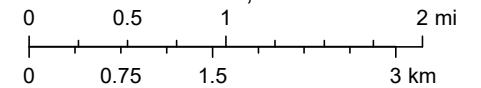
90 - 95 percentile

95 - 100 percentile

AM/NS Calvert

AM/NS Calvert

1:72,224



Location: User-specified point center at 31.143546, -87.996134

Ring (buffer): 5-miles radius

Description: Air

Summary of ACS Estimates		2013 - 2017	
Population			3,560
Population Density (per sq. mile)			46
Minority Population			1,822
% Minority			51%
Households			1,260
Housing Units			1,631
Housing Units Built Before 1950			120
Per Capita Income			19,062
Land Area (sq. miles) (Source: SF1)			78.11
% Land Area			96%
Water Area (sq. miles) (Source: SF1)			2.90
% Water Area			4%

	2013 - 2017 ACS Estimates	Percent	MOE (±)
<b>Population by Race</b>			
Total	3,560	100%	418
Population Reporting One Race	3,487	98%	1,156
White	1,738	49%	384
Black	1,188	33%	417
American Indian	549	15%	299
Asian	13	0%	34
Pacific Islander	0	0%	11
Some Other Race	0	0%	11
Population Reporting Two or More Races	73	2%	126
Total Hispanic Population	16	0%	35
Total Non-Hispanic Population	3,544		
White Alone	1,738	49%	384
Black Alone	1,179	33%	417
American Indian Alone	542	15%	299
Non-Hispanic Asian Alone	13	0%	34
Pacific Islander Alone	0	0%	11
Other Race Alone	0	0%	11
Two or More Races Alone	73	2%	126
<b>Population by Sex</b>			
Male	1,559	44%	292
Female	2,001	56%	277
<b>Population by Age</b>			
Age 0-4	228	6%	80
Age 0-17	942	26%	192
Age 18+	2,618	74%	342
Age 65+	551	15%	137

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2013 - 2017

Location: User-specified point center at 31.143546, -87.996134

Ring (buffer): 5-miles radius

Description: Air

	2013 - 2017 ACS Estimates	Percent	MOE (±)
<b>Population 25+ by Educational Attainment</b>			
Total	2,406	100%	305
Less than 9th Grade	244	10%	92
9th - 12th Grade, No Diploma	470	20%	161
High School Graduate	1,044	43%	244
Some College, No Degree	503	21%	146
Associate Degree	123	5%	144
Bachelor's Degree or more	144	6%	114
<b>Population Age 5+ Years by Ability to Speak English</b>			
Total	3,332	100%	418
Speak only English	3,306	99%	431
Non-English at Home <sup>1+2+3+4</sup>	26	1%	42
<sup>1</sup> Speak English "very well"	18	1%	35
<sup>2</sup> Speak English "well"	5	0%	22
<sup>3</sup> Speak English "not well"	3	0%	17
<sup>4</sup> Speak English "not at all"	0	0%	11
<sup>3+4</sup> Speak English "less than well"	3	0%	17
<sup>2+3+4</sup> Speak English "less than very well"	8	0%	26
<b>Linguistically Isolated Households*</b>			
Total	3	100%	17
Speak Spanish	0	0%	11
Speak Other Indo-European Languages	0	0%	11
Speak Asian-Pacific Island Languages	3	100%	13
Speak Other Languages	0	0%	11
<b>Households by Household Income</b>			
Household Income Base	1,260	100%	132
< \$15,000	196	16%	86
\$15,000 - \$25,000	209	17%	125
\$25,000 - \$50,000	435	34%	144
\$50,000 - \$75,000	221	18%	90
\$75,000 +	199	16%	97
<b>Occupied Housing Units by Tenure</b>			
Total	1,260	100%	132
Owner Occupied	917	73%	133
Renter Occupied	343	27%	92
<b>Employed Population Age 16+ Years</b>			
Total	2,847	100%	418
In Labor Force	1,178	41%	204
Civilian Unemployed in Labor Force	139	5%	102
Not In Labor Force	1,669	59%	313

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)

\*Households in which no one 14 and over speaks English "very well" or speaks English only.

Location: User-specified point center at 31.143546, -87.996134

Ring (buffer): 5-miles radius

Description: Air

	2013 - 2017 ACS Estimates	Percent	MOE (±)
<b>Population by Language Spoken at Home*</b>			
Total (persons age 5 and above)	1,009	100%	426
English	993	98%	432
Spanish	1	0%	6
French	0	0%	11
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	5	1%	30
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	0	0%	11
Chinese	0	0%	11
Japanese	N/A	N/A	N/A
Korean	0	0%	11
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	2	0%	13
Other Asian	0	0%	11
Tagalog	4	0%	19
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	0	0%	11
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	3	0%	19
Total Non-English	16	2%	607

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2013 - 2017.

\*Population by Language Spoken at Home is available at the census tract summary level and up.

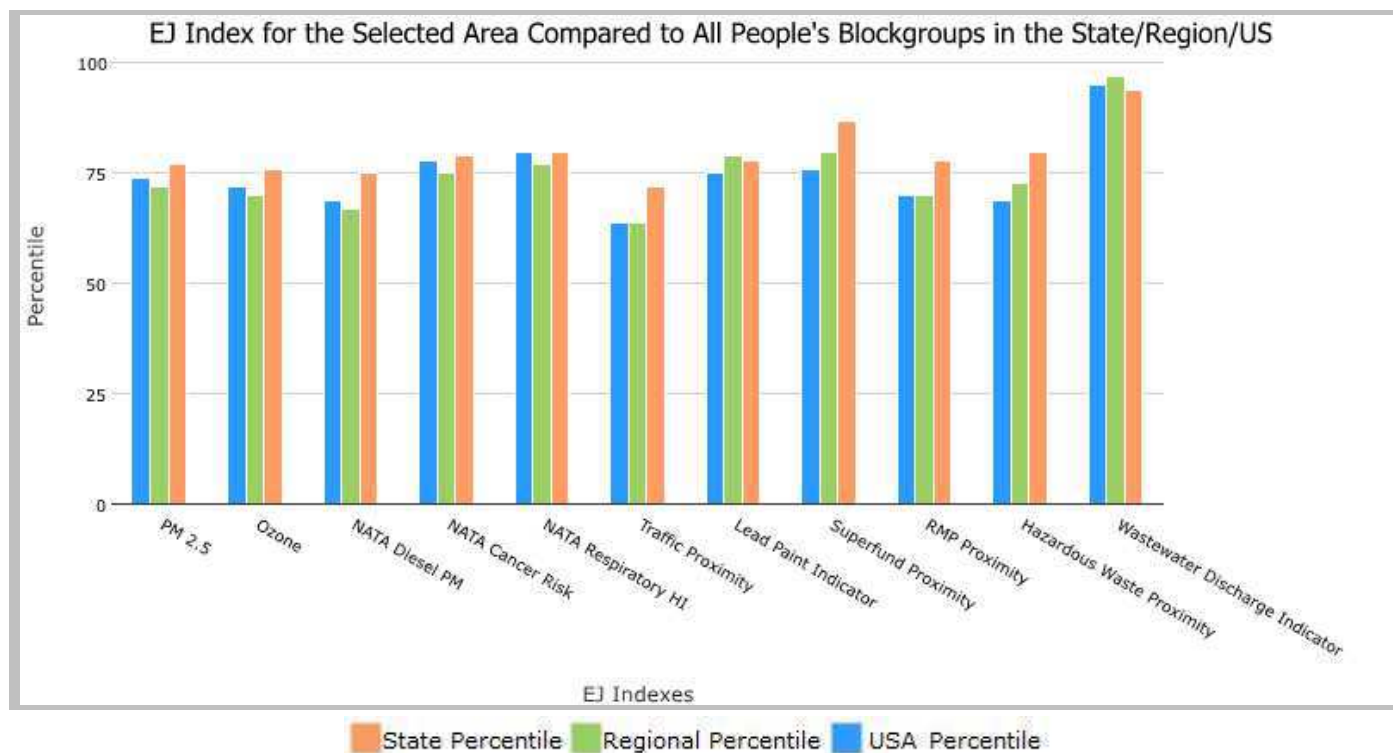
5 miles Ring Centered at 31.143546,-87.996134, ALABAMA, EPA Region 4

Approximate Population: 3,560

Input Area (sq. miles): 78.53

Air

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
<b>EJ Indexes</b>			
EJ Index for PM2.5	77	72	74
EJ Index for Ozone	76	70	72
EJ Index for NATA* Diesel PM	75	67	69
EJ Index for NATA* Air Toxics Cancer Risk	79	75	78
EJ Index for NATA* Respiratory Hazard Index	80	77	80
EJ Index for Traffic Proximity and Volume	72	64	64
EJ Index for Lead Paint Indicator	78	79	75
EJ Index for Superfund Proximity	87	80	76
EJ Index for RMP Proximity	78	70	70
EJ Index for Hazardous Waste Proximity	80	73	69
EJ Index for Wastewater Discharge Indicator	94	97	95



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

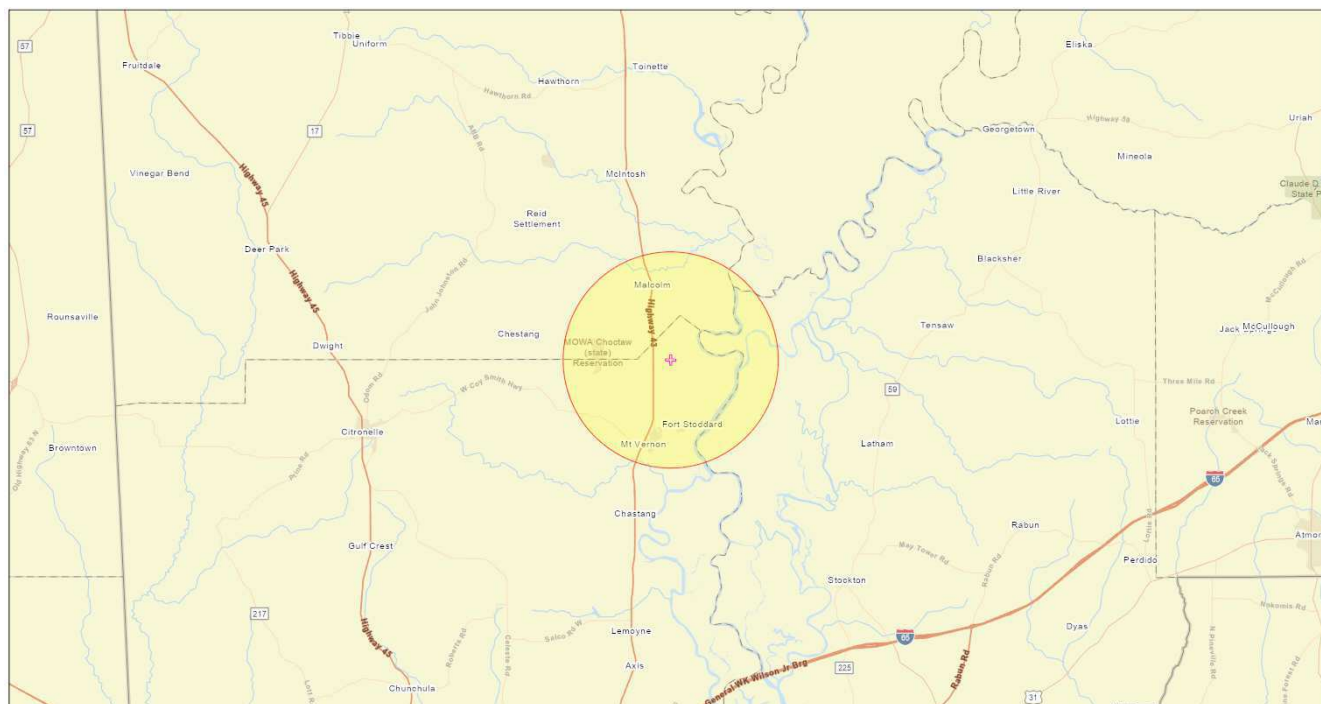


5 miles Ring Centered at 31.143546,-87.996134, ALABAMA, EPA Region 4

Approximate Population: 3,560

Input Area (sq. miles): 78.53

Air



January 19, 2021

Air

1:288,895

0 3 6 12 mi  
0 5 10 20 km

Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, OpenStreetMap contributors, and the GIS User Community

#### Sites reporting to EPA

Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	2

## EJSCREEN Report (Version 2019)

5 miles Ring Centered at 31.143546,-87.996134, ALABAMA, EPA Region 4

Approximate Population: 3,560

Input Area (sq. miles): 78.53

### Air

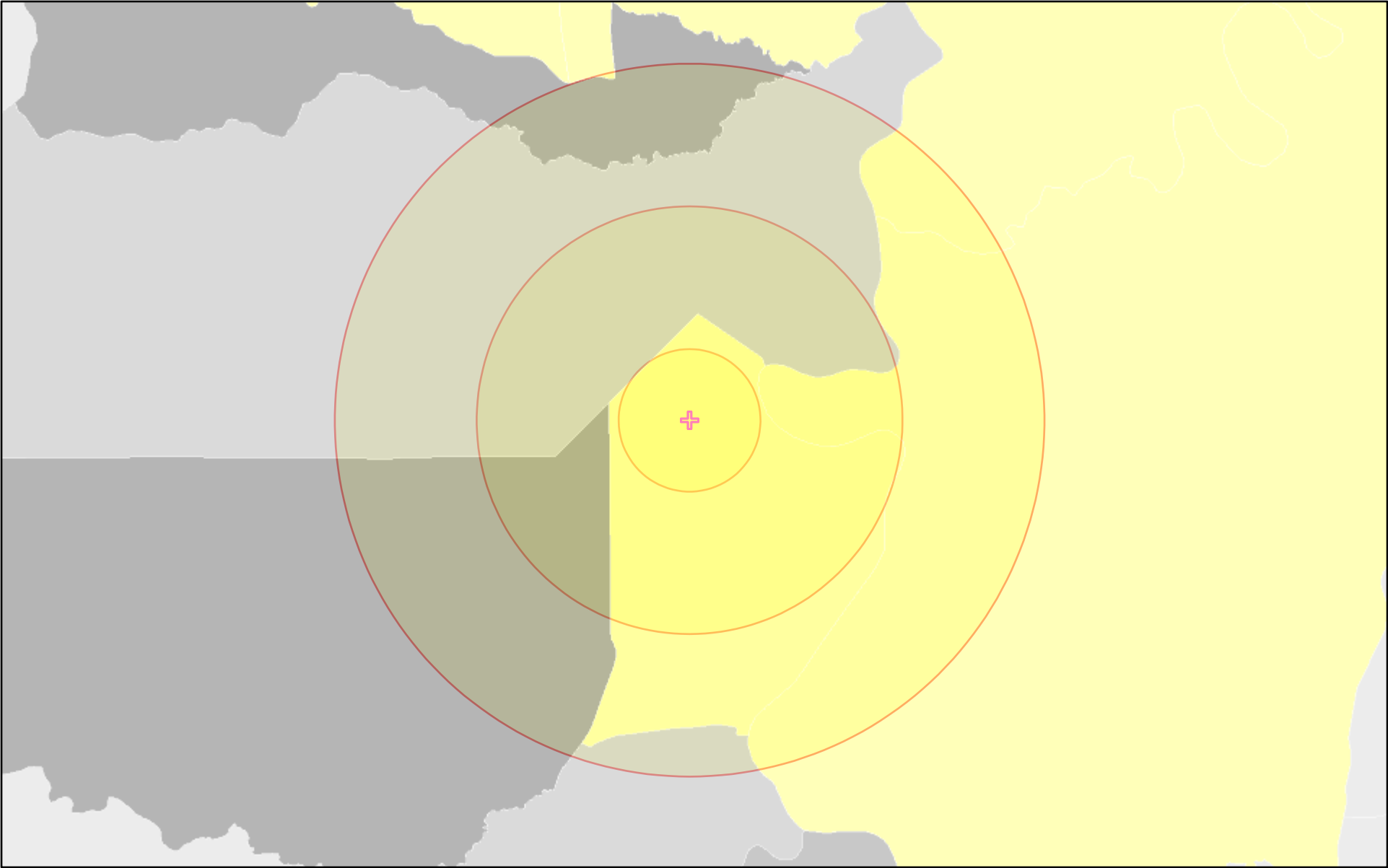
Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
<b>Environmental Indicators</b>							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$ )	8.85	9.75	19	8.59	58	8.3	67
Ozone (ppb)	35.6	41.2	3	40	21	43	12
NATA* Diesel PM ( $\mu\text{g}/\text{m}^3$ )	0.233	0.346	35	0.417	<50th	0.479	<50th
NATA* Cancer Risk (lifetime risk per million)	47	43	70	36	90-95th	32	95-100th
NATA* Respiratory Hazard Index	0.77	0.65	85	0.52	95-100th	0.44	95-100th
Traffic Proximity and Volume (daily traffic count/distance to road)	36	220	37	350	29	750	21
Lead Paint Indicator (% Pre-1960 Housing)	0.14	0.18	56	0.15	65	0.28	44
Superfund Proximity (site count/km distance)	0.085	0.054	84	0.083	75	0.13	61
RMP Proximity (facility count/km distance)	0.27	0.41	65	0.6	53	0.74	46
Hazardous Waste Proximity (facility count/km distance)	0.3	0.39	67	0.52	64	4	43
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.21	2.5	92	0.45	95	14	91
<b>Demographic Indicators</b>							
Demographic Index	50%	36%	76	38%	73	36%	74
Minority Population	51%	34%	75	38%	69	39%	67
Low Income Population	50%	39%	70	37%	72	33%	78
Linguistically Isolated Population	0%	1%	72	3%	51	4%	45
Population With Less Than High School Education	30%	15%	91	13%	91	13%	89
Population Under 5 years of age	6%	6%	59	6%	59	6%	57
Population over 64 years of age	15%	16%	52	16%	56	15%	60

\* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

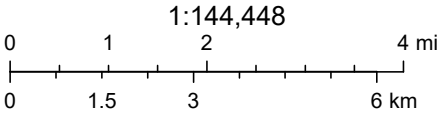
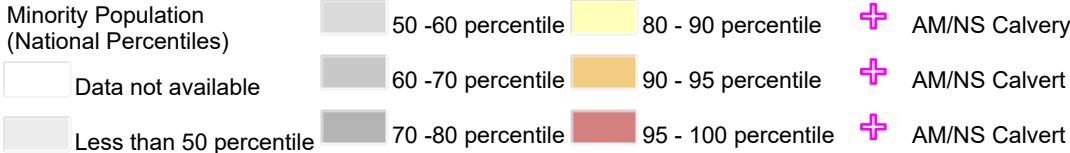
For additional information, see: [www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice)

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

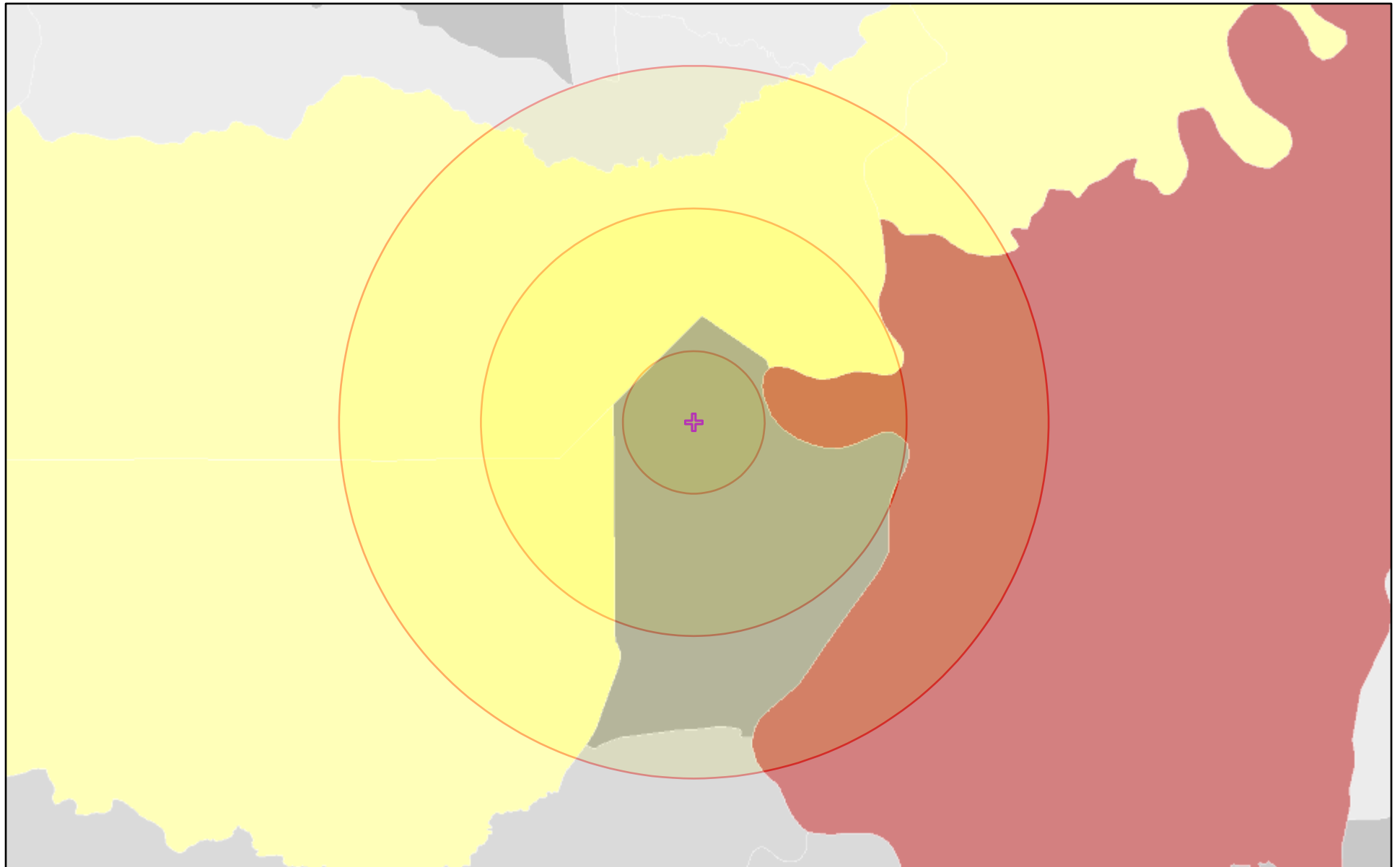
# Minority Population - 5 mile



January 14, 2021



# Low Income Population - 5 mile



January 14, 2021

Low Income Population  
(National Percentiles)

Data not available

Less than 50 percentile

50 - 60 percentile

60 - 70 percentile

70 - 80 percentile

80 - 90 percentile

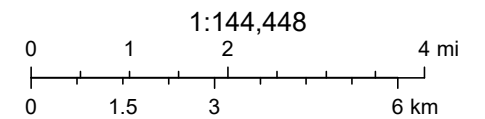
90 - 95 percentile

95 - 100 percentile

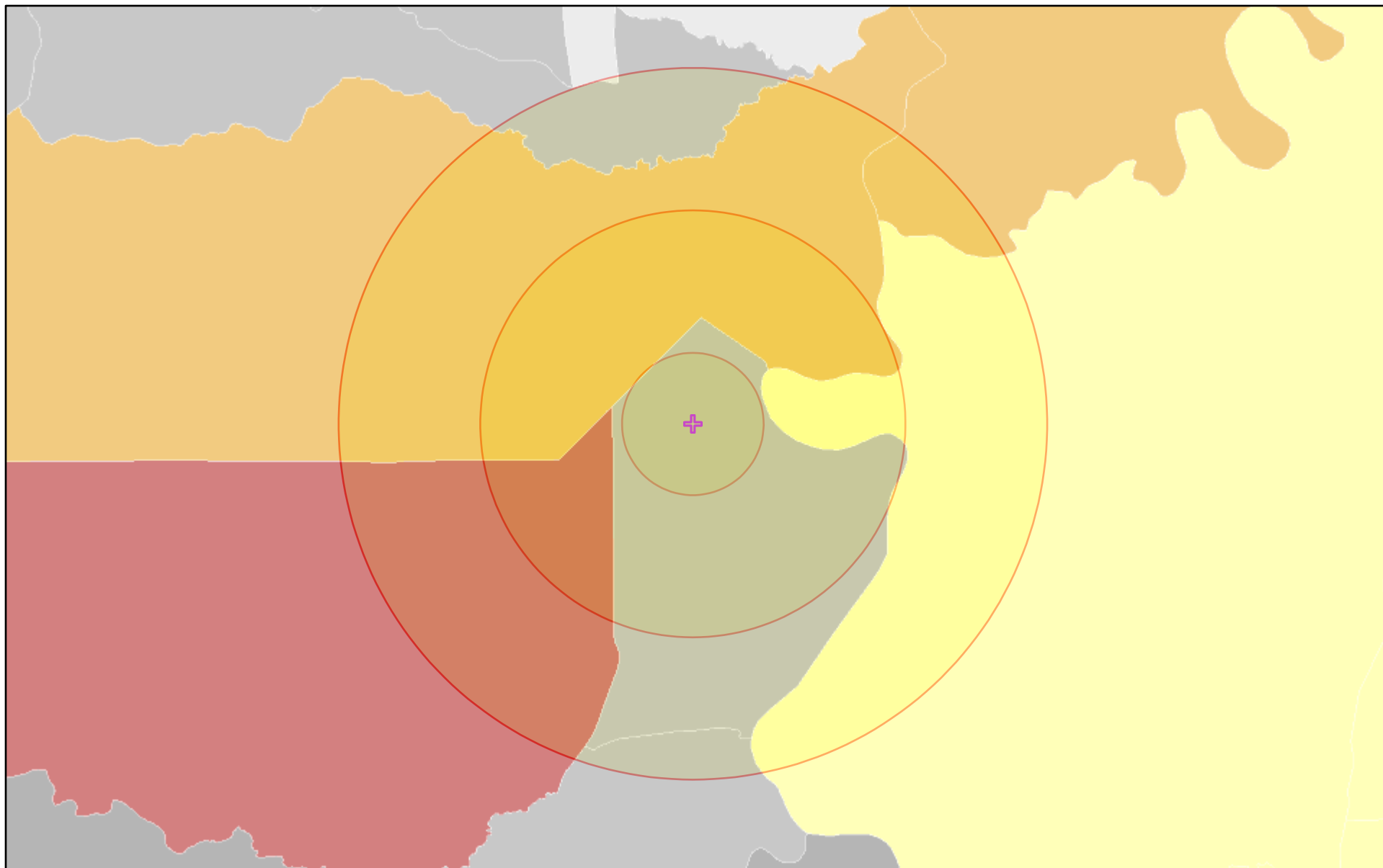
AM/NS Calvert

AM/NS Calvert

AM/NS Calvert



# < HS Education - 5 mile



January 14, 2021

Less Than HS Education  
(National Percentiles)

Data not available

Less than 50 percentile

50 -60 percentile

60 -70 percentile

70 -80 percentile

80 - 90 percentile

90 - 95 percentile

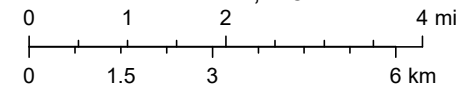
95 - 100 percentile

AM/NS Calvery

AM/NS Calvert

AM/NS Calvert

1:144,448



**ATTACHMENT NO. 3**  
*Proposed Permit Provisos*



# AIR PERMIT

**PERMITTEE:** AM/NS CALVERT, LLC

**FACILITY NAME:** AM/NS CALVERT, LLC

**LOCATION:** CALVERT, ALABAMA

PERMIT NUMBER	DESCRIPTION OF EQUIPMENT, ARTICLE, OR DEVICE
503-0095-X038	Meltshop #1, including: S64 – 331 TPH Electric Arc Furnace, Ladle Metallurgy Furnace, and Continuous Caster controlled by Meltshop Baghouse #1 S65 – Continuous Caster Steam Vent #1

*In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, Ala. Code §§ 22 28 1 to 22 28 23, as amended, the Alabama Environmental Management Act, Ala. Code §§ 22 22A 1 to 22 22A 17, as amended, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.*

**Issuance Date:** DRAFT

## GENERAL PROVISOS

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission, which requires testing, will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.
5. All air pollution control equipment shall be operated at all times while this process is operational. In the event of scheduled maintenance, unscheduled maintenance, or a breakdown of the pollution control equipment, the process shall be shutdown as expeditiously as possible (unless this act and subsequent re-start would clearly cause greater emissions than continuing operations of the process for a short period). The Department shall be notified of all such events **that exceed 1 hour** within 24 hours or the next working day. The notification shall include all pertinent facts, including the duration of the process operating without the control device and the level of excess emissions which have occurred. Records of all such events, regardless of reporting requirements, shall be made and maintained for a period of five years. These records shall be available for inspection.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than **1 hour**, the person responsible for such equipment shall notify the Air Division within an additional 24 hours or the next working day and provide a statement giving all pertinent facts, including the duration of the breakdown. The Air Division shall be notified when the breakdown has been corrected.
7. All deviations from requirements within this permit shall be reported to the Department within 48 hours of the deviation or by the next work day while providing a statement with regards to the date, time, duration, cause, and corrective actions taken to bring the sources back into compliance.
8. This process, including all air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
9. This permit expires and the application is cancelled if construction has not begun within 24 months of the date of issuance of the permit.
10. On completion of construction of the device(s) for which this permit is issued, written notification of the fact is to be submitted to the Chief of the Air Division. The notification



shall indicate whether the device(s) was constructed as proposed in the application. The device(s) shall not be operated until authorization to operate is granted by the Chief of the Air Division. Failure to notify the Chief of the Air Division of completion of construction and/or operation without authorization could result in revocation of this permit.

11. Prior to a date to be specified by the Chief of the Air Division in the authorization to operate, emission tests are to be conducted by persons familiar with and using the EPA Sampling Train and Test Procedure as described in the Code of Federal Regulations, Title 40, Part 60, for the following pollutants. Written tests results are to be reported to the Air Division within 30 working days of completion of testing

Particulates	(X)	Carbon Monoxide	(X)
Sulfur Dioxide	(X)	Nitrogen Oxides	(X)
Lead	(X)	Visible Emissions	(X)
Volatile Organic Compounds (X)			

12. Submittal of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
13. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
14. Nothing in this permit or conditions thereto shall negate any authority granted to the Air Division pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
15. This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.
16. The Air Division must be notified in writing at least 10 working days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

- (a) The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.
- (b) A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedure requires probe cleaning).

- (c) A description of the process(es) to be tested, including the feed rate, any operating parameter used to control or influence the operations, and the rated capacity.
- (d) A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances.

A pretest meeting may be held at the request of the source owner or the Department. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.

All test reports must be submitted to the Air Division within 30 days of the actual completion of the test, unless an extension of time is specifically approved by the Air Division.

- 17. Records will be maintained of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the process equipment and any malfunction of the air pollution control equipment. These records will be kept in a permanent form suitable for inspection and will be retained for at least two years following the date of each occurrence.
- 18. Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.

Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne. A minimum of one, or a combination, of the following methods shall be utilized to minimize airborne dust from plant or haul roads and grounds:

- (a) by the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;
- (b) by reducing the speed of vehicular traffic to a point below that at which dust emissions are created;
- (c) by paving;
- (d) by the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions;

Should one, or a combination, of the above methods fail to adequately reduce airborne dust from plant or haul roads and grounds, alternative methods shall be employed, either exclusively or in combination with one or all of the above control techniques, so that dust will not become airborne. Alternative methods shall be approved by the Department prior to utilization.

- 19. Any performance tests required shall be conducted and data reduced in accordance with the test methods and procedures contained in each specific permit condition unless the Director (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, or (3) approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance.
- 20. The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.

21. The permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting or reducing the permitted activity.
22. The permittee shall keep this permit under file or on display at all times at the site where the facility for which the permit is issued is located and shall make the permit readily available for inspection by any or all persons who may request to see it.
23. The permittee shall submit an annual compliance certification to the Department no later than 60 days following the anniversary of the permittee's Title V permit.
  - (a) The compliance certification shall include the following:
    - (1) The identification of each term or condition of this permit that is the basis of the certification;
    - (2) The compliance status;
    - (3) The method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with Rule 335-3-16-.05(c) (Monitoring and Recordkeeping Requirements);
    - (4) Whether compliance has been continuous or intermittent; and
    - (5) Such other facts as the Department may require in order to determine the compliance status of the source.
  - (b) The compliance certification shall be submitted to:

Alabama Department of Environmental Management  
Air Division  
P.O. Box 301463  
Montgomery, AL 36130-1463

## PROVISOS FOR MELTSHP #1

Federally Enforceable Provisos	Regulations
<i>Applicability</i>	
1. These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-14-.04, " <i>Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration Permitting (PSD)]</i> ".	Rule 335-3-14-.04
2. These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, " <i>Major Source Operating Permits</i> ".	Rule 335-3-16-.03
3. The electric arc furnace is subject to the applicable requirements of 40 CFR Part 60, Subpart AAa, " <i>Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983</i> ".	Rule 335-3-10-.02(27)(a) 40 CFR 60.270a(a)
4. The electric arc furnace is subject to the applicable requirements of 40 CFR Part 60, Subpart A, " <i>General Provisions</i> ".	Rule 335-3-10-.02(1) 40 CFR 60.1(a)
<i>Emission Standards</i>	
1. The production of molten (ladled) steel by the electric arc furnace shall not exceed 1,929,043 tons during any consecutive twelve-month period.	Rule 335-3-14-.04(9) (PSD/BACT)
2. The opacity of emissions from the stack associated with the electric arc furnace (Meltshop Baghouse #1) shall not exceed three percent (3%) opacity as determined by the Continuous Opacity Monitoring System (COMS) over a six (6) minute average.	Rule 335-3-14-.04(9) (PSD/BACT) 40 CFR 60.272a(a)(2)
3. The opacity of emissions from any dust handling system shall not exceed that designated as ten percent (10%) opacity as determined by a six (6) minute average.	40 CFR 60.272a(b)
4. Visible emissions from the roof or any openings of the building enclosure associated with the electric arc furnace shall be prohibited.	Rule 335-3-14-.04(9) (PSD/BACT)
5. Filterable particulate matter (PM) emissions from the meltshop baghouse shall not exceed an outlet grain loading of 0.0018 gr/dscf.	Rule 335-3-14-.04(9) (PSD/BACT)
6. Filterable and condensable PM <sub>10</sub> emissions from the meltshop baghouse shall not exceed an outlet grain loading of 0.0052 gr/dscf.	Rule 335-3-14-.04(9) (PSD/BACT)

Federally Enforceable Provisos	Regulations
7. Filterable and condensable PM <sub>2.5</sub> emissions from the meltshop baghouse shall not exceed an outlet grain loading of 0.0052 gr/dscf.	Rule 335-3-14-.04(9) (PSD/BACT)
8. Sulfur dioxide (SO <sub>2</sub> ) emissions from the meltshop baghouse shall not exceed 115.9 lb/hr and 0.35 lb/ton of steel produced.	Rule 335-3-14-.04(9) (PSD/BACT)
9. Nitrogen oxide (NO <sub>x</sub> ) emissions from the meltshop baghouse shall not exceed 115.9 lb/hr and 0.35 lb/ton of steel produced.	Rule 335-3-14-.04(9) (PSD/BACT)
10. Carbon monoxide (CO) emissions from the meltshop baghouse shall not exceed 728.2 lb/hr and 2.2 lb/ton of steel produced.	Rule 335-3-14-.04(9) (PSD/BACT)
11. Volatile organic compound (VOC) emissions as propane from the meltshop baghouse shall not exceed 43.0 lb/hr and 0.13 lb/ton of steel produced.	Rule 335-3-14-.04(9) (PSD/BACT)
12. Lead emissions from the meltshop baghouse shall not exceed 0.66 lb/hr and 0.002 lb/ton of steel produced.	Rule 335-3-14-.04(9) (PSD/BACT)
13. CO <sub>2e</sub> emissions from the meltshop baghouse shall not exceed 826,889 tons per year (TPY) based on a twelve (12) month rolling total.	Rule 335-3-14-.04(9) (PSD/BACT)
14. Filterable and condensable PM emissions from the continuous caster spray vent shall not exceed an outlet grain loading of 0.003 gr/dscf.	Rule 335-3-14-.04(9) (PSD/BACT)
15. All dust handling systems (screw conveyors, silos, dumpsters, etc.) from baghouse hoppers shall be enclosed to prevent fugitive emissions from these handling systems.	Rule 335-3-14-.04(9) (PSD/BACT)
16. All unpaved roads shall be vacuum swept or flushed of surface material at least once every day. The vacuum sweeper shall have a minimum blower capacity of 12,000 cfm, and the flushing machine shall dispense water at a rate of 0.32 gal/yd <sup>2</sup> .	Rule 335-3-14-.04(9) (PSD/BACT)
17. All paved roads shall be vacuum swept or flushed of surface material at least once every fifth consecutive day. The vacuum sweeper shall have a minimum blower capacity of 12,000 cfm, and the flushing machine shall dispense water at a rate of 0.32 gal/yd <sup>2</sup> .	Rule 335-3-14-.04(9) (PSD/BACT)
18. All paved parking areas shall be vacuum swept or flushed of surface material at least once every calendar quarter. The vacuum sweeper shall have a minimum blower capacity of 12,000 cfm, and the flushing machine shall dispense water at a rate of 0.32 gal/yd <sup>2</sup> .	Rule 335-3-14-.04(9) (PSD/BACT)

Federally Enforceable Provisos	Regulations
19. Road flushing specified in this permit is not required when the temperature is below 32°F. Road or area cleaning is not required when precipitation during the previous 24-hour period has exceeded 0.01 inches. Subject to Department approval, wetting agents/chemicals may be applied in lieu of road flushing with water.	Rule 335-3-14-.04(9) (PSD/BACT)
20. Storage piles, storage silos, and material handling systems for iron and steel scrap, hot briquetted iron, pig iron, iron carbide, fluxing materials, direct reduced iron (DRI), and alloying agents shall be maintained in such a way so as to minimize the generation of dust. Storage silos shall be controlled by vent filters, conveyors and transfer stations shall be enclosed where technically feasible, water sprays or wet suppression shall be used where technically feasible, and good housekeeping shall be practiced.	Rule 335-3-14-.04(9) (PSD/BACT)
<i>Compliance and Performance Test Methods and Procedures</i>	
1. Method 9 of 40 CFR Part 60 (latest edition), Appendix A and the COMS shall be used in the determination of the amount of opacity in particulate matter emissions.	Rule 335-3-14-.04(9) (PSD/BACT) Rule 335-3-1-.05 40 CFR 60.275a(e)(3)
2. Method 22 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of the presence of opacity in particulate matter emissions.	Rule 335-3-1-.05
3. Method 5 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of PM (filterable) emissions.	Rule 335-3-1-.05
4. Method 202 of 40 CFR Part 51 (latest edition), Appendix M shall be used in the determination of total PM (filterable and condensable) emissions.	Rule 335-3-1-.05
5. Method 6C of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of SO <sub>2</sub> emissions.	Rule 335-3-1-.05
6. Method 7E of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of NO <sub>x</sub> emissions.	Rule 335-3-1-.05
7. Method 10 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of CO emissions.	Rule 335-3-1-.05
8. Method 25A of 40 CFR Part 60 (latest edition), Appendix A, or another method approved by the Department, shall be used in the determination of VOC emissions.	Rule 335-3-1-.05
9. Method 12 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of lead emissions.	Rule 335-3-1-.05

Federally Enforceable Provisos	Regulations
10. The Permittee shall comply with the test methods and procedures in §60.275a(a)-(j) of 40 CFR Part 60, Subpart AAa.	40 CFR 60.275a
<i>Emission Monitoring</i>	
1. The installed Continuous Opacity Monitoring System (COMS) on the stack associated with the meltshop baghouse shall be operated and maintained according to the procedures in Performance Specification 1 of 40 CFR Part 60, Appendix B.	Rule 335-3-14-.04 (PSD/BACT) 40 CFR 60.273a(a)
2. The Permittee shall perform observations of the shop opacity at least once per day when the furnace is operating in the meltdown and refining period. Observations should be at least 10 minutes in duration, and shop opacity shall be determined in accordance with Method 22.	Rule 335-3-14-.04 (PSD/BACT)
3. The Permittee shall comply with the monitoring requirements in §60.274a of 40 CFR Part 60, Subpart AAa.	40 CFR 60.674a(a)-(h)
4. The Permittee shall comply with the monitoring requirements prescribed in the Appendix to this permit.	Rule 335-3-16-.05(c)1.
5. The Permittee shall continuously measure and record the pressure differential between the inlet and exhaust of the meltshop baghouse to determine if the pressure differential is within the operating range established by the Permittee within six months of startup. Whenever the pressure differential is outside of the range, maintenance inspections and/or corrective action shall be initiated.	Rule 335-3-16-.05(c)1.
6. The Permittee shall perform a visual inspection of the Dust Handling Equipment at least once per day. This inspection shall be performed by a person familiar with Method 9. If visible emissions are noted at any time, the Permittee shall perform an observation in accordance with Method 9 and take appropriate actions as necessary to eliminate the observed emissions immediately.	Rule 335-3-16-.05(c)1.
7. The Permittee shall monitor the sulfur content from each load received of the injection carbon utilized in the EAF. The sulfur content of the injection carbon utilized in the EAF shall not exceed the sulfur content of the carbon used in the most recent compliance test that demonstrated compliance. The Permittee may use vendor test data or shipment certifications to verify the sulfur content in the injection carbon. If the sulfur content in the injection carbon is greater than the established parameter, the Department must be notified within 24 hours.	Rule 335-3-16-.05(c)1.
8. The Permittee shall operate a well-maintained direct evacuation control system (DEC). Inspections shall be conducted at least once per quarter to ensure proper operation.	Rule 335-3-16-.05(c)1.

Federally Enforceable Provisos	Regulations
9. The Permittee shall conduct an initial emission test for PM <sub>filterable</sub> , PM <sub>10</sub> , PM <sub>2.5</sub> , NO <sub>x</sub> , SO <sub>2</sub> , CO, VOC, lead, and visible emissions from the meltshop baghouse within the twelve (12) months of startup. The PM portion of the test report shall include the information in §63.276a(f) of 40 CFR Part 60, Subpart AAa.	Rule 335-3-14-.04 (PSD/BACT) 40 CFR 63.276a(f)
10. The Permittee shall conduct subsequent emissions tests for filterable and condensable particulate matter and visible emissions from the meltshop baghouse at least once every twelve (12) months. The test report shall include the information in §63.276a(f) of 40 CFR Part 60, Subpart AAa.	Rule 335-3-14-.04 (PSD/BACT) 40 CFR 63.276a(f)
<i>Recordkeeping and Reporting Requirements</i>	
1. All records shall be retained for a period of at least five (5) years from the date of generation. All records shall be maintained in a form suitable for inspection.	Rule 335-3-16-.05(c)2.(ii)
2. The Permittee shall maintain records documenting each occasion in which paved areas are cleaned in accordance with the permit and any occasion in which these paved areas are not cleaned according to required schedule. This record shall include any justification for failure to meet the required schedule, such as equipment breakdown or inclement weather conditions. A summary of this record shall be submitted with the semi-annual report required by §60.276a(b) of 40 CFR Part 60, Subpart AAa.	Rule 335-3-14-.04 (PSD/BACT)
3. The Permittee shall maintain a record of the 12-month rolling total CO <sub>2e</sub> emissions from this source.	Rule 335-3-14-.04 (PSD/BACT)
4. The Permittee shall maintain a record of the sulfur content in the injection carbon utilized in the EAF.	Rule 335-3-16-.05(c)2.
5. The Permittee shall maintain a record of the monthly and 12-month rolling total steel production.	Rule 335-3-16-.05(c)2.
6. The Permittee shall maintain a record of all inspections, to include visible observations, Method 9 observations, Method 22 observations, and COMS measurements conducted to satisfy the requirements of this Permit. This should also include problems observed and corrective actions taken.	Rule 335-3-16-.05(c)2.
7. The Permittee shall maintain a record of the quarterly inspections performed on the DEC.	Rule 335-3-16-.05(c)2.
8. The Permittee shall submit a written report of exceedances of the control device opacity, as measured by the COMs, to the Department semi-annually. For the purposes of these reports,	40 CFR 60.276a(b)



**Federally Enforceable Provisos****Regulations**

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| exceedances are defined as all 6-minute periods during which the average opacity is 3 percent or greater.  |  |
| 9. The Permittee shall submit a written report of exceedances of the EAF shop and dust handling equipment opacity limits to the Department semi-annually. For purposes of these reports, exceedances are defined as opacity observations from the EAF shop and/or the dust handling equipment in excess of the emission limits specified in the permit. Copies of Method 9 and Method 22 observations performed shall be included with the report. | 40 CFR 60.276a(g)<br>Rule 335-3-14-.04<br>(PSD/BACT) |
| 10. The Permittee shall comply with the recordkeeping and reporting requirements in §60.276a of 40 CFR Part 60, Subpart AAa.   | 40 CFR 60.276a(a)-(g)                                |

## APPENDIX – MONITORING

### *Monitoring Plan for Meltshop Baghouse # 1*

	Indicator 1	Indicator 2	Indicator 3	Indicator 4
I. Indicator	Opacity	Bag Condition	Opacity	Pressure Drop
Measurement Approach	COMS	Visual Inspection	Method 9	Magnehelic
II. Indicator Range	While the unit is operating, an excursion is defined as an opacity measurement exceeding 3.0% on a 6-minute average. Excursions trigger an inspection, corrective action, and a reporting requirement.	An excursion is defined as a failure to perform the monthly inspection. Excursions trigger a reporting requirement.	While the unit is operating, an exceedance is defined as the presence of visible emissions greater than 3.0 % opacity on a 6-minute average. Excursions trigger an inspection, corrective action, and a reporting requirement.	While the unit is operating, an excursion is defined as a pressure differential outside of the operating range established by the Permittee within six months of startup. Excursions trigger an inspection, corrective action, and a reporting requirement.
III. Performance Criteria				
A. Data Representativeness	Measurement is being made inside the exhaust of the baghouse.	Baghouse inspected visually for deterioration and the facility will replace bags as needed.	Measurement is being made at the emission point (baghouse exhaust).	The magnehelic measures the pressure differential between the inlet and outlet of the baghouse.
B. Verification of Operation Status	N/A	N/A	N/A	N/A
C. QA/QC Practices and Criteria	The COMS will be operated in accordance with 40 CFR, Part 60, Appendix B, and Performance Specifications 1 (PS1).	The baghouse will be inspected by trained and qualified personnel.	The observer will be Method 9 certified.	The magnehelic will be calibrated annually. If abnormal pressure is noted, pressure taps will be checked.
D. Monitoring Frequency	It will be measured continuously.	A minimum monthly inspection will be performed.	A 6-minute method 9 observation will be performed daily.	It will be measured continuously.
E. Data Collection Procedures	The opacity will be recorded with date and time.	The baghouse inspection will be recorded with the time, date, condition of bags, how many bags were replaced, and name of the inspector.	The VE observation will be recorded with the time, date, and name of the observer.	The pressure drop will be recorded with date and time.
F. Averaging Period	6-minute average	Monthly	6-minute average	Instantaneous



## AIR PERMIT

**PERMITTEE:** AM/NS CALVERT, LLC

**FACILITY NAME:** AM/NS CALVERT, LLC

**LOCATION:** CALVERT, ALABAMA

PERMIT NUMBER	DESCRIPTION OF EQUIPMENT, ARTICLE, OR DEVICE
503-0095-X039	Meltshop #2, including: S68 – 331 TPH Electric Arc Furnace, Ladle Metallurgy Furnace, and Continuous Caster controlled by Meltshop Baghouse #2 S69 – Continuous Caster Steam Vent #2

*In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, Ala. Code §§ 22 28 1 to 22 28 23, as amended, the Alabama Environmental Management Act, Ala. Code §§ 22 22A 1 to 22 22A 17, as amended, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.*

**Issuance Date:** DRAFT

## GENERAL PROVISOS

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission, which requires testing, will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.
5. All air pollution control equipment shall be operated at all times while this process is operational. In the event of scheduled maintenance, unscheduled maintenance, or a breakdown of the pollution control equipment, the process shall be shutdown as expeditiously as possible (unless this act and subsequent re-start would clearly cause greater emissions than continuing operations of the process for a short period). The Department shall be notified of all such events **that exceed 1 hour** within 24 hours or the next working day. The notification shall include all pertinent facts, including the duration of the process operating without the control device and the level of excess emissions which have occurred. Records of all such events, regardless of reporting requirements, shall be made and maintained for a period of five years. These records shall be available for inspection.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than **1 hour**, the person responsible for such equipment shall notify the Air Division within an additional 24 hours or the next working day and provide a statement giving all pertinent facts, including the duration of the breakdown. The Air Division shall be notified when the breakdown has been corrected.
7. All deviations from requirements within this permit shall be reported to the Department within 48 hours of the deviation or by the next work day while providing a statement with regards to the date, time, duration, cause, and corrective actions taken to bring the sources back into compliance.
8. This process, including all air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
9. This permit expires and the application is cancelled if construction has not begun within 24 months of the date of issuance of the permit.
10. On completion of construction of the device(s) for which this permit is issued, written notification of the fact is to be submitted to the Chief of the Air Division. The notification

shall indicate whether the device(s) was constructed as proposed in the application. The device(s) shall not be operated until authorization to operate is granted by the Chief of the Air Division. Failure to notify the Chief of the Air Division of completion of construction and/or operation without authorization could result in revocation of this permit.

11. Prior to a date to be specified by the Chief of the Air Division in the authorization to operate, emission tests are to be conducted by persons familiar with and using the EPA Sampling Train and Test Procedure as described in the Code of Federal Regulations, Title 40, Part 60, for the following pollutants. Written tests results are to be reported to the Air Division within 30 working days of completion of testing

Particulates	(X)	Carbon Monoxide	(X)
Sulfur Dioxide	(X)	Nitrogen Oxides	(X)
Lead	(X)	Visible Emissions	(X)
Volatile Organic Compounds (X)			

12. Submittal of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
13. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
14. Nothing in this permit or conditions thereto shall negate any authority granted to the Air Division pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
15. This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.
16. The Air Division must be notified in writing at least 10 working days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

- (a) The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.
- (b) A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedure requires probe cleaning).

- (c) A description of the process(es) to be tested, including the feed rate, any operating parameter used to control or influence the operations, and the rated capacity.
- (d) A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances.

A pretest meeting may be held at the request of the source owner or the Department. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.

All test reports must be submitted to the Air Division within 30 days of the actual completion of the test, unless an extension of time is specifically approved by the Air Division.

- 17. Records will be maintained of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the process equipment and any malfunction of the air pollution control equipment. These records will be kept in a permanent form suitable for inspection and will be retained for at least two years following the date of each occurrence.
- 18. Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.

Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne. A minimum of one, or a combination, of the following methods shall be utilized to minimize airborne dust from plant or haul roads and grounds:

- (a) by the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;
- (b) by reducing the speed of vehicular traffic to a point below that at which dust emissions are created;
- (c) by paving;
- (d) by the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions;

Should one, or a combination, of the above methods fail to adequately reduce airborne dust from plant or haul roads and grounds, alternative methods shall be employed, either exclusively or in combination with one or all of the above control techniques, so that dust will not become airborne. Alternative methods shall be approved by the Department prior to utilization.

- 19. Any performance tests required shall be conducted and data reduced in accordance with the test methods and procedures contained in each specific permit condition unless the Director (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, or (3) approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance.
- 20. The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.

21. The permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting or reducing the permitted activity.
22. The permittee shall keep this permit under file or on display at all times at the site where the facility for which the permit is issued is located and shall make the permit readily available for inspection by any or all persons who may request to see it.
23. The permittee shall submit an annual compliance certification to the Department no later than 60 days following the anniversary of the permittee's Title V permit.
  - (a) The compliance certification shall include the following:
    - (1) The identification of each term or condition of this permit that is the basis of the certification;
    - (2) The compliance status;
    - (3) The method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with Rule 335-3-16-.05(c) (Monitoring and Recordkeeping Requirements);
    - (4) Whether compliance has been continuous or intermittent; and
    - (5) Such other facts as the Department may require in order to determine the compliance status of the source.
  - (b) The compliance certification shall be submitted to:

Alabama Department of Environmental Management  
Air Division  
P.O. Box 301463  
Montgomery, AL 36130-1463

## PROVISOS FOR MELTSHP #2

Federally Enforceable Provisos	Regulations
<i>Applicability</i>	
1. These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-14-.04, " <i>Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration Permitting (PSD)]</i> ".	Rule 335-3-14-.04
2. These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, " <i>Major Source Operating Permits</i> ".	Rule 335-3-16-.03
3. The electric arc furnace is subject to the applicable requirements of 40 CFR Part 60, Subpart AAa, " <i>Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983</i> ".	Rule 335-3-10-.02(27)(a) 40 CFR 60.270a(a)
4. The electric arc furnace is subject to the applicable requirements of 40 CFR Part 60, Subpart A, " <i>General Provisions</i> ".	Rule 335-3-10-.02(1) 40 CFR 60.1(a)
<i>Emission Standards</i>	
1. The production of molten (ladled) steel by the electric arc furnace shall not exceed 1,929,043 tons during any consecutive twelve-month period.	Rule 335-3-14-.04(9) (PSD/BACT)
2. The opacity of emissions from the stack associated with the electric arc furnace (Meltshop Baghouse #2) shall not exceed three percent (3%) opacity as determined by the Continuous Opacity Monitoring System (COMS) over a six (6) minute average.	Rule 335-3-14-.04(9) (PSD/BACT) 40 CFR 60.272a(a)(2)
3. The opacity of emissions from any dust handling system shall not exceed that designated as ten percent (10%) opacity as determined by a six (6) minute average.	40 CFR 60.272a(b)
4. Visible emissions from the roof or any openings of the building enclosure associated with the electric arc furnace shall be prohibited.	Rule 335-3-14-.04(9) (PSD/BACT)
5. Filterable particulate matter (PM) emissions from the meltshop baghouse shall not exceed an outlet grain loading of 0.0018 gr/dscf.	Rule 335-3-14-.04(9) (PSD/BACT)
6. Filterable and condensable PM <sub>10</sub> emissions from the meltshop baghouse shall not exceed an outlet grain loading of 0.0052 gr/dscf.	Rule 335-3-14-.04(9) (PSD/BACT)



Federally Enforceable Provisos	Regulations
7. Filterable and condensable PM <sub>2.5</sub> emissions from the meltshop baghouse shall not exceed an outlet grain loading of 0.0052 gr/dscf.	Rule 335-3-14-.04(9) (PSD/BACT)
8. Sulfur dioxide (SO <sub>2</sub> ) emissions from the meltshop baghouse shall not exceed 115.9 lb/hr and 0.35 lb/ton of steel produced.	Rule 335-3-14-.04(9) (PSD/BACT)
9. Nitrogen oxide (NO <sub>x</sub> ) emissions from the meltshop baghouse shall not exceed 115.9 lb/hr and 0.35 lb/ton of steel produced.	Rule 335-3-14-.04(9) (PSD/BACT)
10. Carbon monoxide (CO) emissions from the meltshop baghouse shall not exceed 728.2 lb/hr and 2.2 lb/ton of steel produced.	Rule 335-3-14-.04(9) (PSD/BACT)
11. Volatile organic compound (VOC) emissions as propane from the meltshop baghouse shall not exceed 43.0 lb/hr and 0.13 lb/ton of steel produced.	Rule 335-3-14-.04(9) (PSD/BACT)
12. Lead emissions from the meltshop baghouse shall not exceed 0.66 lb/hr and 0.002 lb/ton of steel produced.	Rule 335-3-14-.04(9) (PSD/BACT)
13. CO <sub>2e</sub> emissions from the meltshop baghouse shall not exceed 810,413 tons per year (TPY) based on a twelve (12) month rolling total.	Rule 335-3-14-.04(9) (PSD/BACT)
14. Filterable and condensable PM emissions from the continuous caster spray vent shall not exceed an outlet grain loading of 0.003 gr/dscf.	Rule 335-3-14-.04(9) (PSD/BACT)
15. All dust handling systems (screw conveyors, silos, dumpsters, etc.) from baghouse hoppers shall be enclosed to prevent fugitive emissions from these handling systems.	Rule 335-3-14-.04(9) (PSD/BACT)
16. All unpaved roads shall be vacuum swept or flushed of surface material at least once every day. The vacuum sweeper shall have a minimum blower capacity of 12,000 cfm, and the flushing machine shall dispense water at a rate of 0.32 gal/yd <sup>2</sup> .	Rule 335-3-14-.04(9) (PSD/BACT)
17. All paved roads shall be vacuum swept or flushed of surface material at least once every fifth consecutive day. The vacuum sweeper shall have a minimum blower capacity of 12,000 cfm, and the flushing machine shall dispense water at a rate of 0.32 gal/yd <sup>2</sup> .	Rule 335-3-14-.04(9) (PSD/BACT)
18. All paved parking areas shall be vacuum swept or flushed of surface material at least once every calendar quarter. The vacuum sweeper shall have a minimum blower capacity of 12,000 cfm, and the flushing machine shall dispense water at a rate of 0.32 gal/yd <sup>2</sup> .	Rule 335-3-14-.04(9) (PSD/BACT)

Federally Enforceable Provisos	Regulations
19. Road flushing specified in this permit is not required when the temperature is below 32°F. Road or area cleaning is not required when precipitation during the previous 24-hour period has exceeded 0.01 inches. Subject to Department approval, wetting agents/chemicals may be applied in lieu of road flushing with water.	Rule 335-3-14-.04(9) (PSD/BACT)
20. Storage piles, storage silos, and material handling systems for iron and steel scrap, hot briquetted iron, pig iron, iron carbide, fluxing materials, direct reduced iron (DRI), and alloying agents shall be maintained in such a way so as to minimize the generation of dust. Storage silos shall be controlled by vent filters, conveyors and transfer stations shall be enclosed where technically feasible, water sprays or wet suppression shall be used where technically feasible, and good housekeeping shall be practiced.	Rule 335-3-14-.04(9) (PSD/BACT)
<i>Compliance and Performance Test Methods and Procedures</i>	
1. Method 9 of 40 CFR Part 60 (latest edition), Appendix A and the COMS shall be used in the determination of the amount of opacity in particulate matter emissions.	Rule 335-3-14-.04(9) (PSD/BACT) Rule 335-3-1-.05 40 CFR 60.275a(e)(3)
2. Method 22 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of the presence of opacity in particulate matter emissions.	Rule 335-3-1-.05
3. Method 5 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of PM (filterable) emissions.	Rule 335-3-1-.05
4. Method 202 of 40 CFR Part 51 (latest edition), Appendix M shall be used in the determination of total PM (filterable and condensable) emissions.	Rule 335-3-1-.05
5. Method 6C of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of SO <sub>2</sub> emissions.	Rule 335-3-1-.05
6. Method 7E of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of NO <sub>x</sub> emissions.	Rule 335-3-1-.05
7. Method 10 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of CO emissions.	Rule 335-3-1-.05
8. Method 25A of 40 CFR Part 60 (latest edition), Appendix A, or another method approved by the Department, shall be used in the determination of VOC emissions.	Rule 335-3-1-.05
9. Method 12 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of lead emissions.	Rule 335-3-1-.05

Federally Enforceable Provisos	Regulations
10. The Permittee shall comply with the test methods and procedures in §60.275a(a)-(j) of 40 CFR Part 60, Subpart AAa.	40 CFR 60.275a
<i>Emission Monitoring</i>	
1. The installed Continuous Opacity Monitoring System (COMS) on the stack associated with the meltshop baghouse shall be operated and maintained according to the procedures in Performance Specification 1 of 40 CFR Part 60, Appendix B.	Rule 335-3-14-.04 (PSD/BACT) 40 CFR 60.273a(a)
2. The Permittee shall perform observations of the shop opacity at least once per day when the furnace is operating in the meltdown and refining period. Observations should be at least 10 minutes in duration, and shop opacity shall be determined in accordance with Method 22.	Rule 335-3-14-.04 (PSD/BACT)
3. The Permittee shall comply with the monitoring requirements in §60.274a of 40 CFR Part 60, Subpart AAa.	40 CFR 60.674a(a)-(h)
4. The Permittee shall comply with the monitoring requirements prescribed in the Appendix to this permit.	Rule 335-3-16-.05(c)1.
5. The Permittee shall continuously measure and record the pressure differential between the inlet and exhaust of the meltshop baghouse to determine if the pressure differential is within the operating range established by the Permittee within six months of startup. Whenever the pressure differential is outside of the range, maintenance inspections and/or corrective action shall be initiated.	Rule 335-3-16-.05(c)1.
6. The Permittee shall perform a visual inspection of the Dust Handling Equipment at least once per day. This inspection shall be performed by a person familiar with Method 9. If visible emissions are noted at any time, the Permittee shall perform an observation in accordance with Method 9 and take appropriate actions as necessary to eliminate the observed emissions immediately.	Rule 335-3-16-.05(c)1.
7. The Permittee shall monitor the sulfur content from each load received of the injection carbon utilized in the EAF. The sulfur content of the injection carbon utilized in the EAF shall not exceed the sulfur content of the carbon used in the most recent compliance test that demonstrated compliance. The Permittee may use vendor test data or shipment certifications to verify the sulfur content in the injection carbon. If the sulfur content in the injection carbon is greater than the established parameter, the Department must be notified within 24 hours.	Rule 335-3-16-.05(c)1.
8. The Permittee shall operate a well-maintained direct evacuation control system (DEC). Inspections shall be conducted at least once per quarter to ensure proper operation.	Rule 335-3-16-.05(c)1.

Federally Enforceable Provisos	Regulations
9. The Permittee shall conduct an initial emission test for PM <sub>filterable</sub> , PM <sub>10</sub> , PM <sub>2.5</sub> , NO <sub>x</sub> , SO <sub>2</sub> , CO, VOC, lead, and visible emissions from the meltshop baghouse within the twelve (12) months of startup. The PM portion of the test report shall include the information in §63.276a(f) of 40 CFR Part 60, Subpart AAa.	Rule 335-3-14-.04 (PSD/BACT) 40 CFR 63.276a(f)
10. The Permittee shall conduct subsequent emissions tests for filterable and condensable particulate matter and visible emissions from the meltshop baghouse at least once every twelve (12) months. The test report shall include the information in §63.276a(f) of 40 CFR Part 60, Subpart AAa.	Rule 335-3-14-.04 (PSD/BACT) 40 CFR 63.276a(f)
<i>Recordkeeping and Reporting Requirements</i>	
1. All records shall be retained for a period of at least five (5) years from the date of generation. All records shall be maintained in a form suitable for inspection.	Rule 335-3-16-.05(c)2.(ii)
2. The Permittee shall maintain records documenting each occasion in which paved areas are cleaned in accordance with the permit and any occasion in which these paved areas are not cleaned according to required schedule. This record shall include any justification for failure to meet the required schedule, such as equipment breakdown or inclement weather conditions. A summary of this record shall be submitted with the semi-annual report required by §60.276a(b) of 40 CFR Part 60, Subpart AAa.	Rule 335-3-14-.04 (PSD/BACT)
3. The Permittee shall maintain a record of the 12-month rolling total CO <sub>2e</sub> emissions from this source.	Rule 335-3-14-.04 (PSD/BACT)
4. The Permittee shall maintain a record of the sulfur content in the injection carbon utilized in the EAF.	Rule 335-3-16-.05(c)2.
5. The Permittee shall maintain a record of the monthly and 12-month rolling total steel production.	Rule 335-3-16-.05(c)2.
6. The Permittee shall maintain a record of all inspections, to include visible observations, Method 9 observations, Method 22 observations, and COMS measurements conducted to satisfy the requirements of this Permit. This should also include problems observed and corrective actions taken.	Rule 335-3-16-.05(c)2.
7. The Permittee shall maintain a record of the quarterly inspections performed on the DEC.	Rule 335-3-16-.05(c)2.
8. The Permittee shall submit a written report of exceedances of the control device opacity, as measured by the COMs, to the Department semi-annually. For the purposes of these reports,	40 CFR 60.276a(b)

**Federally Enforceable Provisos****Regulations**

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| exceedances are defined as all 6-minute periods during which the average opacity is 3 percent or greater.  |  |
| 9. The Permittee shall submit a written report of exceedances of the EAF shop and dust handling equipment opacity limits to the Department semi-annually. For purposes of these reports, exceedances are defined as opacity observations from the EAF shop and/or the dust handling equipment in excess of the emission limits specified in the permit. Copies of Method 9 and Method 22 observations performed shall be included with the report. | 40 CFR 60.276a(g)<br>Rule 335-3-14-.04<br>(PSD/BACT) |
| 10. The Permittee shall comply with the recordkeeping and reporting requirements in §60.276a of 40 CFR Part 60, Subpart AAa.   | 40 CFR 60.276a(a)-(g)                                |

## APPENDIX – MONITORING

### *Monitoring Plan for Meltshop Baghouse #2*

	Indicator 1	Indicator 2	Indicator 3	Indicator 4
I. Indicator	Opacity	Bag Condition	Opacity	Pressure Drop
Measurement Approach	COMS	Visual Inspection	Method 9	Magnehelic
II. Indicator Range	While the unit is operating, an excursion is defined as an opacity measurement exceeding 3.0% on a 6-minute average. Excursions trigger an inspection, corrective action, and a reporting requirement.	An excursion is defined as a failure to perform the monthly inspection. Excursions trigger a reporting requirement.	While the unit is operating, an exceedance is defined as the presence of visible emissions greater than 3.0 % opacity on a 6-minute average. Excursions trigger an inspection, corrective action, and a reporting requirement.	While the unit is operating, an excursion is defined as a pressure differential outside of the operating range established by the Permittee within six months of startup. Excursions trigger an inspection, corrective action, and a reporting requirement.
III. Performance Criteria				
A. Data Representativeness	Measurement is being made inside the exhaust of the baghouse.	Baghouse inspected visually for deterioration and the facility will replace bags as needed.	Measurement is being made at the emission point (baghouse exhaust).	The magnehelic measures the pressure differential between the inlet and outlet of the baghouse.
B. Verification of Operation Status	N/A	N/A	N/A	N/A
C. QA/QC Practices and Criteria	The COMS will be operated in accordance with 40 CFR, Part 60, Appendix B, and Performance Specifications 1 (PS1).	The baghouse will be inspected by trained and qualified personnel.	The observer will be Method 9 certified.	The magnehelic will be calibrated annually. If abnormal pressure is noted, pressure taps will be checked.
D. Monitoring Frequency	It will be measured continuously.	A minimum monthly inspection will be performed.	A 6-minute method 9 observation will be performed daily.	It will be measured continuously.
E. Data Collection Procedures	The opacity will be recorded with date and time.	The baghouse inspection will be recorded with the time, date, condition of bags, how many bags were replaced, and name of the inspector.	The VE observation will be recorded with the time, date, and name of the observer.	The pressure drop will be recorded with date and time.
F. Averaging Period	6-minute average	Monthly	6-minute average	Instantaneous



# AIR PERMIT

**PERMITTEE:** AM/NS CALVERT, LLC  
**FACILITY NAME:** AM/NS CALVERT, LLC  
**LOCATION:** CALVERT, ALABAMA

PERMIT NUMBER	DESCRIPTION OF EQUIPMENT, ARTICLE, OR DEVICE
503-0095-X040	S66 – Ruhrstahl-Heraeus Degassing Operations with Flare S70 – Vacuum Tank Degassing Operations with Flare

*In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, Ala. Code §§ 22 28 1 to 22 28 23, as amended, the Alabama Environmental Management Act, Ala. Code §§ 22 22A 1 to 22 22A 17, as amended, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.*

**Issuance Date:** DRAFT

## GENERAL PROVISOS

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission, which requires testing, will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.
5. All air pollution control equipment shall be operated at all times while this process is operational. In the event of scheduled maintenance, unscheduled maintenance, or a breakdown of the pollution control equipment, the process shall be shutdown as expeditiously as possible (unless this act and subsequent re-start would clearly cause greater emissions than continuing operations of the process for a short period). The Department shall be notified of all such events **that exceed 1 hour** within 24 hours or the next working day. The notification shall include all pertinent facts, including the duration of the process operating without the control device and the level of excess emissions which have occurred. Records of all such events, regardless of reporting requirements, shall be made and maintained for a period of five years. These records shall be available for inspection.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than **1 hour**, the person responsible for such equipment shall notify the Air Division within an additional 24 hours or the next working day and provide a statement giving all pertinent facts, including the duration of the breakdown. The Air Division shall be notified when the breakdown has been corrected.
7. All deviations from requirements within this permit shall be reported to the Department within 48 hours of the deviation or by the next work day while providing a statement with regards to the date, time, duration, cause, and corrective actions taken to bring the sources back into compliance.
8. This process, including all air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
9. This permit expires and the application is cancelled if construction has not begun within 24 months of the date of issuance of the permit.
10. On completion of construction of the device(s) for which this permit is issued, written notification of the fact is to be submitted to the Chief of the Air Division. The notification



shall indicate whether the device(s) was constructed as proposed in the application. The device(s) shall not be operated until authorization to operate is granted by the Chief of the Air Division. Failure to notify the Chief of the Air Division of completion of construction and/or operation without authorization could result in revocation of this permit.

11. Submittal of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
12. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
13. Nothing in this permit or conditions thereto shall negate any authority granted to the Air Division pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
14. This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.
15. The Air Division must be notified in writing at least 10 working days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

- (a) The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.
- (b) A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedure requires probe cleaning).
- (c) A description of the process(es) to be tested, including the feed rate, any operating parameter used to control or influence the operations, and the rated capacity.
- (d) A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances.

A pretest meeting may be held at the request of the source owner or the Department. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.

All test reports must be submitted to the Air Division within 30 days of the actual completion of the test, unless an extension of time is specifically approved by the Air Division.

16. Records will be maintained of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the process equipment and any malfunction of the air pollution control equipment. These records will be kept in a permanent form suitable for inspection and will be retained for at least two years following the date of each occurrence.
17. Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.

Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne. A minimum of one, or a combination, of the following methods shall be utilized to minimize airborne dust from plant or haul roads and grounds:

- (a) by the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;
- (b) by reducing the speed of vehicular traffic to a point below that at which dust emissions are created;
- (c) by paving;
- (d) by the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions;

Should one, or a combination, of the above methods fail to adequately reduce airborne dust from plant or haul roads and grounds, alternative methods shall be employed, either exclusively or in combination with one or all of the above control techniques, so that dust will not become airborne. Alternative methods shall be approved by the Department prior to utilization.

18. Any performance tests required shall be conducted and data reduced in accordance with the test methods and procedures contained in each specific permit condition unless the Director (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, or (3) approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance.
19. The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.
20. The permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting or reducing the permitted activity.
21. The permittee shall keep this permit under file or on display at all times at the site where the facility for which the permit is issued is located and shall make the permit readily available for inspection by any or all persons who may request to see it.
22. The permittee shall submit an annual compliance certification to the Department no later than 60 days following the anniversary of the permittee's Title V permit.

- (a) The compliance certification shall include the following:
- (1) The identification of each term or condition of this permit that is the basis of the certification;
  - (2) The compliance status;
  - (3) The method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with Rule 335-3-16-.05(c) (Monitoring and Recordkeeping Requirements);
  - (4) Whether compliance has been continuous or intermittent; and
  - (5) Such other facts as the Department may require in order to determine the compliance status of the source.
- (b) The compliance certification shall be submitted to:

Alabama Department of Environmental Management  
Air Division  
P.O. Box 301463  
Montgomery, AL 36130-1463

## PROVISOS FOR DEGASSING OPERATIONS

Federally Enforceable Provisos	Regulations
<i>Applicability</i>	
1. This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-14-.04, “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration Permitting (PSD)]”.	Rule 335-3-14-.04
2. This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “Major Source Operating Permits”.	Rule 335-3-16-.03
<i>Emission Standards</i>	
1. The combined throughput of molten (ladled) steel by both degassing operations shall not exceed 3,858,085 tons during any consecutive twelve-month period.	Rule 335-3-14-.04(9) (PSD/BACT)
2. Each flare shall be designed to meet the requirements in §60.18(c) of 40 CFR Part 60, Subpart A.	Rule 335-3-14-.04(9) (PSD/BACT)
3. Visible emissions from each degassing flare shall be prohibited, except for periods not to exceed 5 minutes during any 2 consecutive hours.	Rule 335-3-14-.04(9) (PSD/BACT)
4. Each flare shall be operated with a flame present at all times while the associated vacuum degasser is in operation.	Rule 335-3-14-.04(9) (PSD/BACT)
5. No fuel other than natural gas shall be used to operate the flares.	Rule 335-3-14-.04(9) (PSD/BACT)
6. Particulate matter (PM) emissions from each degassing operation shall not exceed an outlet grain loading of 0.008 gr/dscf.	Rule 335-3-14-.04(9) (PSD/BACT)
7. Carbon monoxide (CO) emissions from each degassing operation shall not exceed 0.075 lb/ton of steel processed.	Rule 335-3-14-.04(9) (PSD/BACT)
<i>Compliance and Performance Test Methods and Procedures</i>	
1. Method 22 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of the presence of opacity in particulate matter emissions.	Rule 335-3-1-.05
<i>Emission Monitoring</i>	
1. The Permittee shall comply with the monitoring requirements prescribed in the Appendix to this permit.	Rule 335-3-16-.05(c)1.

Federally Enforceable Provisos	Regulations
2. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame	Rule 335-3-14-.04 (PSD/BACT)
3. The Permittee shall perform observations of each degasser flare at least once per day when the degassing operations are in use. Observations should be at least 10 minutes, and the duration of visible emissions shall be determined in accordance with Method 22. The Permittee shall initiate corrective action if visible emissions are observed for a period in excess of 5 minutes.	Rule 335-3-14-.04 (PSD/BACT)
4. The Permittee shall conduct annual preventative maintenance inspections of each flare.	Rule 335-3-16-.05(c)1.
5. The volumetric flow rate, in standard cubic feet per minute, of gas vented to the flare shall be continuously monitored.	Rule 335-3-16-.05(c)1.
<i>Recordkeeping and Reporting Requirements</i>	
1. All records shall be retained for a period of at least five (5) years from the date of generation. All records shall be maintained in a form suitable for inspection.	Rule 335-3-16-.05(c)2.(ii)
2. The Permittee shall maintain a record of all visual Method 22 observations performed to satisfy the requirements of this Permit. This should also include problems observed and corrective actions taken.	Rule 335-3-16-.05(c)2.
3. The Permittee shall maintain a record of the annual preventative maintenance inspections performed on each flare.	Rule 335-3-16-.05(c)2.
4. The Permittee shall maintain records of flare pilot temperatures continuously measured by the thermocouple.	Rule 335-3-16-.05(c)2.
5. The Permittee shall maintain records of flared gas flowrate continuously measured by the flowmeter.	Rule 335-3-16-.05(c)2.
6. The Permittee shall record the monthly natural gas usage of each flare.	Rule 335-3-16-.05(c)2.
7. The Permittee shall calculate and record the monthly PM and CO emissions from each flare.	Rule 335-3-16-.05(c)2.

## APPENDIX – MONITORING

### *Compliance Plan for Degassing Operations Flares*

	Indicator 1	Indicator 2
I. Indicator	Flame Presence	Inspection/Maintenance
Measurement Approach	Monitoring of flame presence will be measured using a thermocouple.	Annual inspections will be conducted and applicable maintenance will be performed according to work practices and procedures.
II. Indicator Range	An excursion is defined as thermocouple readings indicating no flame presence when emissions are routed to the flare	Excursions are defined as both not conducting annual inspections properly and not performing necessary maintenance according to work practices and procedures.
III. Performance Criteria		
A. Data Representativeness	The flame presence will be measured using instrumentation provided with the flares.	Inspections will be performed at the flares.
B. Verification of Operation Status	Records of the readings will be maintained.	Not Applicable
C. QA/QC Practices and Criteria	Controller will develop and implement a periodic performance check system.	Qualified personal will conduct inspections and perform maintenance.
D. Monitoring Frequency	Continuous	Annual inspections and Preventative maintenance conducted as needed
E. Data Collection Procedures	Continuous	Each inspection and maintenance item will be recorded.
F. Averaging Period	Not Applicable	Not Applicable



# AIR PERMIT

**PERMITTEE:** AM/NS CALVERT, LLC  
**FACILITY NAME:** AM/NS CALVERT, LLC  
**LOCATION:** CALVERT, ALABAMA

PERMIT NUMBER	DESCRIPTION OF EQUIPMENT, ARTICLE, OR DEVICE
503-0095-X041	Seven (7) Emergency Diesel Engines <ul style="list-style-type: none"><li>• Three (3) 3,618 hp Engines (SXX-13 – SXX-15)</li><li>• Two (2) 2,680 hp Engines (SXX-9 and SXX-11)</li><li>• Two (2) 335 hp Engines (SXX-10 and SXX-12)</li></ul>

*In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, Ala. Code §§ 22 28 1 to 22 28 23, as amended, the Alabama Environmental Management Act, Ala. Code §§ 22 22A 1 to 22 22A 17, as amended, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.*

**Issuance Date:** DRAFT

## GENERAL PROVISOS

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission, which requires testing, will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.
5. All air pollution control equipment shall be operated at all times while this process is operational. In the event of scheduled maintenance, unscheduled maintenance, or a breakdown of the pollution control equipment, the process shall be shutdown as expeditiously as possible (unless this act and subsequent re-start would clearly cause greater emissions than continuing operations of the process for a short period). The Department shall be notified of all such events **that exceed 1 hour** within 24 hours or the next working day. The notification shall include all pertinent facts, including the duration of the process operating without the control device and the level of excess emissions which have occurred. Records of all such events, regardless of reporting requirements, shall be made and maintained for a period of five years. These records shall be available for inspection.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than **1 hour**, the person responsible for such equipment shall notify the Air Division within an additional 24 hours or the next working day and provide a statement giving all pertinent facts, including the duration of the breakdown. The Air Division shall be notified when the breakdown has been corrected.
7. All deviations from requirements within this permit shall be reported to the Department within 48 hours of the deviation or by the next work day while providing a statement with regards to the date, time, duration, cause, and corrective actions taken to bring the sources back into compliance.
8. This process, including all air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
9. This permit expires and the application is cancelled if construction has not begun within 24 months of the date of issuance of the permit.
10. On completion of construction of the device(s) for which this permit is issued, written notification of the fact is to be submitted to the Chief of the Air Division. The notification



shall indicate whether the device(s) was constructed as proposed in the application. The device(s) shall not be operated until authorization to operate is granted by the Chief of the Air Division. Failure to notify the Chief of the Air Division of completion of construction and/or operation without authorization could result in revocation of this permit.

11. Prior to a date to be specified by the Chief of the Air Division in the authorization to operate, emission tests are to be conducted by persons familiar with and using the EPA Sampling Train and Test Procedure as described in the Code of Federal Regulations, Title 40, Part 60, for the following pollutants. Written tests results are to be reported to the Air Division within 30 working days of completion of testing.

Particulates	( )	Carbon Monoxide	( )
Sulfur Dioxide	( )	Nitrogen Oxides	( )
Volatile Organic Compounds	( )	Visible Emissions	( )

12. Submittal of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
13. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
14. Nothing in this permit or conditions thereto shall negate any authority granted to the Air Division pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
15. This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.
16. The Air Division must be notified in writing at least 10 working days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

- (a) The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.
- (b) A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedure requires probe cleaning).

- (c) A description of the process(es) to be tested, including the feed rate, any operating parameter used to control or influence the operations, and the rated capacity.
- (d) A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances.

A pretest meeting may be held at the request of the source owner or the Department. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.

All test reports must be submitted to the Air Division within 30 days of the actual completion of the test, unless an extension of time is specifically approved by the Air Division.

- 17. Records will be maintained of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the process equipment and any malfunction of the air pollution control equipment. These records will be kept in a permanent form suitable for inspection and will be retained for at least two years following the date of each occurrence.
- 18. Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.

Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne. A minimum of one, or a combination, of the following methods shall be utilized to minimize airborne dust from plant or haul roads and grounds:

- (a) by the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;
- (b) by reducing the speed of vehicular traffic to a point below that at which dust emissions are created;
- (c) by paving;
- (d) by the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions;

Should one, or a combination, of the above methods fail to adequately reduce airborne dust from plant or haul roads and grounds, alternative methods shall be employed, either exclusively or in combination with one or all of the above control techniques, so that dust will not become airborne. Alternative methods shall be approved by the Department prior to utilization.

- 19. Any performance tests required shall be conducted and data reduced in accordance with the test methods and procedures contained in each specific permit condition unless the Director (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, or (3) approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance.
- 20. The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.

21. The permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting or reducing the permitted activity.
22. The permittee shall keep this permit under file or on display at all times at the site where the facility for which the permit is issued is located and shall make the permit readily available for inspection by any or all persons who may request to see it.
23. The permittee shall submit an annual compliance certification to the Department no later than 60 days following the anniversary of the permittee's Title V permit.
  - (a) The compliance certification shall include the following:
    - (1) The identification of each term or condition of this permit that is the basis of the certification;
    - (2) The compliance status;
    - (3) The method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with Rule 335-3-16-.05(c) (Monitoring and Recordkeeping Requirements);
    - (4) Whether compliance has been continuous or intermittent; and
    - (5) Such other facts as the Department may require in order to determine the compliance status of the source.
  - (b) The compliance certification shall be submitted to:

Alabama Department of Environmental Management  
Air Division  
P.O. Box 301463  
Montgomery, AL 36130-1463

## PROVISOS FOR EMERGENCY ENGINES

Federally Enforceable Provisos	Regulations
<i>Applicability</i>	
1. These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-14-.04, “ <i>Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration Permitting (PSD)]</i> ”.	Rule 335-3-14-.04
2. These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “ <i>Major Source Operating Permits</i> ”.	Rule 335-3-16-.03
3. These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01, “ <i>Control of Particulate Emissions – Visible Emissions</i> ”.	Rule 335-3-4-.01
4. These sources are subject to the applicable requirements of 40 CFR Part 60, Subpart IIII, “Standards of Performance for Stationary Compression Ignition Internal Combustion Engines”.	Rule 335-3-10-.02(87) 40 CFR 60.4200
5. These sources are subject to the applicable requirements of 40 CFR Part 60, Subpart A, “ <i>General Provisions</i> ”, as provided in Table 8 to 40 CFR Part 60, Subpart IIII.	Rule 335-3-10-.02(1) 40 CFR 60.4218
6. These sources are subject to the applicable requirements of 40 CFR Part 63, Subpart ZZZZ, “ <i>National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines</i> ”.	Rule 335-3-11-.06(103) 40 CFR 63.6585
7. This source is subject to the applicable requirements of 40 CFR Part 63, Subpart A, “ <i>General Provisions</i> ”, as provided in Table 8 to 40 CFR Part 63, Subpart ZZZZ.	Rule 335-3-11-.06(1) 40 CFR 63.6665
<i>Emission Standards</i>	
1. Engines SXX-9 – SXX-15 are subject to the following emission standards listed in Table 1 of 89.112 per §60.4202(a)(2) via §60.4205(b).	40 CFR 60.4205(b)
(a) Non-Methane Hydrocarbon plus Nitrogen Oxide (NMHC+NO <sub>x</sub> ) emissions from the engines SXX-10 and SXX-12 shall not exceed 4.0 g/kW-hr or 2.98 g/HP-hr.	
(b) Non-Methane Hydrocarbon plus Nitrogen Oxide (NMHC+NO <sub>x</sub> ) emissions from the engines SXX-9, SXX-11, SXX-13, SXX-14, and SXX-15 shall not exceed 6.4 g/kW-hr or 4.77 g/HP-hr.	

Federally Enforceable Provisos	Regulations
<ul style="list-style-type: none"> <li>(c) Carbon Monoxide (CO) emissions from all engines shall not exceed 3.5 g/kW-hr or 2.61 g/HP-hr.</li> <li>(d) Particulate Matter (PM) emissions from all engines shall not exceed 0.20 g/kW-hr or 0.15 g/HP-hr.</li> <li>2. The opacity of emissions from this source shall not exceed following: <ul style="list-style-type: none"> <li>(a) Except for one 6-minute period during any 60-minute period, no source shall discharge into the atmosphere particulate that results in an opacity greater than 20%, as determined by a 6-minute average.</li> <li>(b) At no time shall any source discharge into the atmosphere particulate that results in an opacity greater than 40%, as determined by a 6-minute average.</li> </ul> </li> <li>3. In addition to the opacity standards of ADEM Admin. Code Rule 335-3-4-.01(1), emissions from the engines may not exceed opacity of: <ul style="list-style-type: none"> <li>(a) 20 percent during acceleration mode.</li> <li>(b) 15 percent during lugging mode.</li> <li>(c) 50 percent during peaks in either acceleration or lugging modes.</li> </ul> </li> <li>4. Each engine shall operate no more than 100 hours per calendar year.</li> </ul>	<ul style="list-style-type: none"> <li></li> <li></li> <li>Rule 335-3-4-.01(1)(a)</li> <li>Rule 335-3-4-.01(1)(b)</li> <li>40 CFR 60.4205(b) 40 CFR 60.4202(a)</li> <li>40 CFR 89.113(a)(1) 40 CFR 1039.105(b)(1)</li> <li>40 CFR 89.113(a)(2) 40 CFR 1039.105(b)(2)</li> <li>40 CFR 89.113(a)(3) 40 CFR 1039.105(b)(3)</li> <li>Rule 335-3-14-.04(9) (BACT)</li> </ul>
<i>Compliance and Performance Test Methods and Procedures</i>	
<ul style="list-style-type: none"> <li>1. Method 5 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of filterable particulate matter emissions.</li> <li>2. Method 7E of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of nitrogen dioxide emissions.</li> <li>3. Method 9 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of opacity.</li> <li>4. Method 10 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of carbon monoxide emissions.</li> </ul>	<ul style="list-style-type: none"> <li>Rule 335-3-1-.05</li> <li>Rule 335-3-1-.05</li> <li>Rule 335-3-1-.05</li> <li>Rule 335-3-1-.05</li> </ul>

Federally Enforceable Provisos	Regulations
5. Method 25a of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of hydrocarbon emissions.	Rule 335-3-1-.05
6. The procedures of 40 CFR Part 86, Subpart I shall be used in the determination of compliance with the opacity requirements of Emission Standards Proviso 3 of this section.	40 CFR 89.113(b) 40 CFR 1039.105(b)
<i>Emission Monitoring</i>	
1. The engines must be certified according to 40 CFR Part 60, Subpart IIII for the same model year and maximum engine power:	40 CFR 60.4205(b) 40 CFR 60.4211(c)
2. These engines must be installed and configured according to the manufacturer's specifications.	40 CFR 60.4211(a)
3. The facility must operate and maintain these units according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.	40 CFR 60.4206
4. These units must use diesel fuel that meets the requirements of 40 CFR §80.510(b).	40 CFR 60.4207(b)
5. The Permittee must install a non-resettable hour meter prior to startup of the engines.	40 CFR 60.4209(a)
6. For each emergency engine, the facility shall meet the following requirements to demonstrate compliance with 40 CFR Part 60 Subpart IIII:	40 CFR 60.4211(f)
(a) The engine may be operated for the purpose of emergency situations, maintenance checks, and readiness testing for a period not to exceed 100 hours per year.	Rule 335-3-14-.04(9) (PSD/BACT) 40 CFR 60.4211(f)(2)
(b) The engine may operate up to 50 hours per year in non-emergency situations.	40 CFR 60.4211(f)(3)
(i) The 50 hours for non-emergency situations shall count towards the 100 hours allowed for maintenance checks and readiness.	
(ii) The 50 hours for non-emergency situations shall not be used for peak shaving or generating income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.	

**Federally Enforceable Provisos****Regulations***Recordkeeping and Reporting Requirements*

- |  |  |
|--|--|
| <ol style="list-style-type: none"><li>1. The Permittee must keep records of the operation of the engines in service as recorded through the non-resettable hour meter. The time of operation of each engine must be recorded and maintained for a period of two (2) years.</li><li>2. For engines SXX-9, SXX-11, SXX-13, SXX-14, and SXX-15, the Permittee must submit an initial notification in accordance with §60.6645(f).</li></ol> | <p>Rule 335-3-16-.05(c)2.</p> <p>40 CFR 63.6645(f)<br/>40 CFR 63.6590(b)</p> |
|--|--|

## APPENDIX – NSPS IIII EMERGENCY ENGINES

<b>Emission Point</b>	<b>Location</b>	<b>Capacity (Horsepower)</b>	<b>Fuel</b>
SXX-9	Meltshop 1	2,680	Diesel
SXX-10	Meltshop 1	335	Diesel
SXX-11	Meltshop 2	2,680	Diesel
SXX-12	Meltshop 2	335	Diesel
SXX-13	Casting Water Cooling	3,618	Diesel
SXX-14	Casting Water Cooling	3,618	Diesel
SXX-15	Casting Water Cooling	3,618	Diesel





# AIR PERMIT

**PERMITTEE:** AM/NS CALVERT, LLC  
**FACILITY NAME:** AM/NS CALVERT, LLC  
**LOCATION:** CALVERT, ALABAMA

PERMIT NUMBER	DESCRIPTION OF EQUIPMENT, ARTICLE, OR DEVICE
503-0095-X042	Slag Processing Operations

*In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, Ala. Code §§ 22 28 1 to 22 28 23, as amended, the Alabama Environmental Management Act, Ala. Code §§ 22 22A 1 to 22 22A 17, as amended, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.*

**Issuance Date:** DRAFT

## GENERAL PROVISIONS

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission, which requires testing, will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.
5. All air pollution control equipment shall be operated at all times while this process is operational. In the event of scheduled maintenance, unscheduled maintenance, or a breakdown of the pollution control equipment, the process shall be shutdown as expeditiously as possible (unless this act and subsequent re-start would clearly cause greater emissions than continuing operations of the process for a short period). The Department shall be notified of all such events **that exceed 1 hour** within 24 hours or the next working day. The notification shall include all pertinent facts, including the duration of the process operating without the control device and the level of excess emissions which have occurred. Records of all such events, regardless of reporting requirements, shall be made and maintained for a period of five years. These records shall be available for inspection.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than **1 hour**, the person responsible for such equipment shall notify the Air Division within an additional 24 hours or the next working day and provide a statement giving all pertinent facts, including the duration of the breakdown. The Air Division shall be notified when the breakdown has been corrected.
7. All deviations from requirements within this permit shall be reported to the Department within 48 hours of the deviation or by the next work day while providing a statement with regards to the date, time, duration, cause, and corrective actions taken to bring the sources back into compliance.
8. This process, including all air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
9. This permit expires and the application is cancelled if construction has not begun within 24 months of the date of issuance of the permit.
10. On completion of construction of the device(s) for which this permit is issued, written notification of the fact is to be submitted to the Chief of the Air Division. The notification

shall indicate whether the device(s) was constructed as proposed in the application. The device(s) shall not be operated until authorization to operate is granted by the Chief of the Air Division. Failure to notify the Chief of the Air Division of completion of construction and/or operation without authorization could result in revocation of this permit.

11. Submittal of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
12. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
13. Nothing in this permit or conditions thereto shall negate any authority granted to the Air Division pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
14. This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.
15. The Air Division must be notified in writing at least 10 working days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

- (a) The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.
- (b) A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedure requires probe cleaning).
- (c) A description of the process(es) to be tested, including the feed rate, any operating parameter used to control or influence the operations, and the rated capacity.
- (d) A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances.

A pretest meeting may be held at the request of the source owner or the Department. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.

All test reports must be submitted to the Air Division within 30 days of the actual completion of the test, unless an extension of time is specifically approved by the Air Division.

16. Records will be maintained of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the process equipment and any malfunction of the air pollution control equipment. These records will be kept in a permanent form suitable for inspection and will be retained for at least two years following the date of each occurrence.
17. Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.

Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne. A minimum of one, or a combination, of the following methods shall be utilized to minimize airborne dust from plant or haul roads and grounds:

- (a) by the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;
- (b) by reducing the speed of vehicular traffic to a point below that at which dust emissions are created;
- (c) by paving;
- (d) by the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions;

Should one, or a combination, of the above methods fail to adequately reduce airborne dust from plant or haul roads and grounds, alternative methods shall be employed, either exclusively or in combination with one or all of the above control techniques, so that dust will not become airborne. Alternative methods shall be approved by the Department prior to utilization.

18. Any performance tests required shall be conducted and data reduced in accordance with the test methods and procedures contained in each specific permit condition unless the Director (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, or (3) approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance.
19. The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.
20. The permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting or reducing the permitted activity.
21. The permittee shall keep this permit under file or on display at all times at the site where the facility for which the permit is issued is located and shall make the permit readily available for inspection by any or all persons who may request to see it.
22. The permittee shall submit an annual compliance certification to the Department no later than 60 days following the anniversary of the permittee's Title V permit.

- (a) The compliance certification shall include the following:
- (1) The identification of each term or condition of this permit that is the basis of the certification;
  - (2) The compliance status;
  - (3) The method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with Rule 335-3-16-.05(c) (Monitoring and Recordkeeping Requirements);
  - (4) Whether compliance has been continuous or intermittent; and
  - (5) Such other facts as the Department may require in order to determine the compliance status of the source.
- (b) The compliance certification shall be submitted to:

Alabama Department of Environmental Management  
Air Division  
P.O. Box 301463  
Montgomery, AL 36130-1463

## PROVISOS FOR SLAG PROCESSING OPERATIONS

Federally Enforceable Provisos	Regulations
<i>Applicability</i>	
1. This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-14-.04, “ <i>Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration Permitting (PSD)]</i> ”.	Rule 335-3-14-.04
2. This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “ <i>Major Source Operating Permits</i> ”.	Rule 335-3-16-.03
3. All sources shall be subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01, “ <i>Control of Particulate Emissions – Visible Emissions</i> ”.	Rule 335-3-4-.01(1)
<i>Emission Standards</i>	
1. All sources shall meet the following opacity standards:	
(a) Except for one 6-minute period during any 60-minute period, no source shall discharge into the atmosphere particulate that results in an opacity greater than 20%, as determined by a 6-minute average.	Rule 335-3-4-.01(1)(a)
(b) At no time shall any source discharge into the atmosphere particulate that results in an opacity greater than 40%, as determined by a 6-minute average.	Rule 335-3-4-.01(1)(b)
2. All slag material processing equipment shall use a water spray system to the degree sufficient to suppress the formation of fugitive particulate emissions.	Rule 335-3-14-.04(9) (PSD/BACT)
<i>Compliance and Performance Test Methods and Procedures</i>	
1. Method 9 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of the amount of opacity in particulate matter emissions.	Rule 335-3-1-.05
<i>Emission Monitoring</i>	
1. The Permittee shall observe each water spray system at least once daily, if operating, to ensure proper operation. If problems are noted, corrective action to return the water spray system to proper operation shall be initiated within 2 hours of the observation.	Rule 335-3-16-.05(c)1.

**Federally Enforceable Provisos****Regulations***Recordkeeping and Reporting Requirements*

1. The Permittee shall maintain a record of all monitoring required by this permit. This shall include all problems observed and corrective actions taken. The records shall be maintained in a form suitable for inspection and shall be kept on site for a period of at least five (5) years.

Rule 335-3-16-.05(c)2.



## AIR PERMIT

**PERMITTEE:** AM/NS CALVERT, LLC

**FACILITY NAME:** AM/NS CALVERT, LLC

**LOCATION:** CALVERT, ALABAMA

PERMIT NUMBER	DESCRIPTION OF EQUIPMENT, ARTICLE, OR DEVICE
503-0095-X043	S67 – Scarfing Operations with Wet Electrostatic Precipitator

*In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, Ala. Code §§ 22 28 1 to 22 28 23, as amended, the Alabama Environmental Management Act, Ala. Code §§ 22 22A 1 to 22 22A 17, as amended, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.*

**Issuance Date:** DRAFT



## GENERAL PROVISOS

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission, which requires testing, will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.
5. All air pollution control equipment shall be operated at all times while this process is operational. In the event of scheduled maintenance, unscheduled maintenance, or a breakdown of the pollution control equipment, the process shall be shutdown as expeditiously as possible (unless this act and subsequent re-start would clearly cause greater emissions than continuing operations of the process for a short period). The Department shall be notified of all such events **that exceed 1 hour** within 24 hours or the next working day. The notification shall include all pertinent facts, including the duration of the process operating without the control device and the level of excess emissions which have occurred. Records of all such events, regardless of reporting requirements, shall be made and maintained for a period of five years. These records shall be available for inspection.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than **1 hour**, the person responsible for such equipment shall notify the Air Division within an additional 24 hours or the next working day and provide a statement giving all pertinent facts, including the duration of the breakdown. The Air Division shall be notified when the breakdown has been corrected.
7. All deviations from requirements within this permit shall be reported to the Department within 48 hours of the deviation or by the next work day while providing a statement with regards to the date, time, duration, cause, and corrective actions taken to bring the sources back into compliance.
8. This process, including all air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
9. This permit expires and the application is cancelled if construction has not begun within 24 months of the date of issuance of the permit.
10. On completion of construction of the device(s) for which this permit is issued, written notification of the fact is to be submitted to the Chief of the Air Division. The notification

shall indicate whether the device(s) was constructed as proposed in the application. The device(s) shall not be operated until authorization to operate is granted by the Chief of the Air Division. Failure to notify the Chief of the Air Division of completion of construction and/or operation without authorization could result in revocation of this permit.

11. Prior to a date to be specified by the Chief of the Air Division in the authorization to operate, emission tests are to be conducted by persons familiar with and using the EPA Sampling Train and Test Procedure as described in the Code of Federal Regulations, Title 40, Part 60, for the following pollutants. Written tests results are to be reported to the Air Division within 30 working days of completion of testing.

Particulates	(X)	Carbon Monoxide	( )
Sulfur Dioxide	( )	Nitrogen Oxides	( )
Volatile Organic Compounds	( )	Visible Emissions	( )

12. Submittal of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
13. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
14. Nothing in this permit or conditions thereto shall negate any authority granted to the Air Division pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
15. This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.
16. The Air Division must be notified in writing at least 10 working days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

- (a) The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.
- (b) A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedure requires probe cleaning).

- (c) A description of the process(es) to be tested, including the feed rate, any operating parameter used to control or influence the operations, and the rated capacity.
- (d) A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances.

A pretest meeting may be held at the request of the source owner or the Department. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.

All test reports must be submitted to the Air Division within 30 days of the actual completion of the test, unless an extension of time is specifically approved by the Air Division.

- 17. Records will be maintained of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the process equipment and any malfunction of the air pollution control equipment. These records will be kept in a permanent form suitable for inspection and will be retained for at least two years following the date of each occurrence.
- 18. Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.

Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne. A minimum of one, or a combination, of the following methods shall be utilized to minimize airborne dust from plant or haul roads and grounds:

- (a) by the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;
- (b) by reducing the speed of vehicular traffic to a point below that at which dust emissions are created;
- (c) by paving;
- (d) by the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions;

Should one, or a combination, of the above methods fail to adequately reduce airborne dust from plant or haul roads and grounds, alternative methods shall be employed, either exclusively or in combination with one or all of the above control techniques, so that dust will not become airborne. Alternative methods shall be approved by the Department prior to utilization.

- 19. Any performance tests required shall be conducted and data reduced in accordance with the test methods and procedures contained in each specific permit condition unless the Director (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, or (3) approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance.
- 20. The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.

21. The permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting or reducing the permitted activity.
22. The permittee shall keep this permit under file or on display at all times at the site where the facility for which the permit is issued is located and shall make the permit readily available for inspection by any or all persons who may request to see it.
23. The permittee shall submit an annual compliance certification to the Department no later than 60 days following the anniversary of the permittee's Title V permit.
  - (a) The compliance certification shall include the following:
    - (1) The identification of each term or condition of this permit that is the basis of the certification;
    - (2) The compliance status;
    - (3) The method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with Rule 335-3-16-.05(c) (Monitoring and Recordkeeping Requirements);
    - (4) Whether compliance has been continuous or intermittent; and
    - (5) Such other facts as the Department may require in order to determine the compliance status of the source.
  - (b) The compliance certification shall be submitted to:

Alabama Department of Environmental Management  
Air Division  
P.O. Box 301463  
Montgomery, AL 36130-1463

## PROVISOS FOR SCARFING OPERATIONS

Federally Enforceable Provisos	Regulations
<i>Applicability</i>	
1. This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-14-.04, “ <i>Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration Permitting (PSD)]</i> ”.	Rule 335-3-14-.04
2. This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “ <i>Major Source Operating Permits</i> ”.	Rule 335-3-16-.03
3. All sources shall be subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01, “ <i>Control of Particulate Emissions – Visible Emissions</i> ”.	Rule 335-3-4-.01(1)
<i>Emission Standards</i>	
1. The throughput of steel slabs processed by the scarfing operations shall not exceed 1,377,888 tons during any consecutive twelve-month period.	Rule 335-3-14-.04(9) (PSD/BACT)
2. Particulate matter (PM) emissions from the scarfing operations w/ WESP shall not exceed an outlet grain loading of 0.005 gr/dscf.	Rule 335-3-14-.04(9) (PSD/BACT)
3. The scarfing operations w/ WESP shall meet the following opacity standards:	
(a) Except for one 6-minute period during any 60-minute period, no source shall discharge into the atmosphere particulate that results in an opacity greater than 20%, as determined by a 6-minute average.	Rule 335-3-4-.01(1)(a)
(b) At no time shall any source discharge into the atmosphere particulate that results in an opacity greater than 40%, as determined by a 6-minute average.	Rule 335-3-4-.01(1)(b)
<i>Compliance and Performance Test Methods and Procedures</i>	
1. Method 9 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of the amount of opacity in particulate matter emissions.	Rule 335-3-1-.05
2. Method 5 of 40 CFR Part 60 (latest edition), Appendix A shall be used in the determination of filterable particulate matter emissions.	Rule 335-3-1-.05

Federally Enforceable Provisos	Regulations
<p><i>Emission Monitoring</i></p> <ol style="list-style-type: none"> <li>1. The Permittee shall comply with the monitoring requirements prescribed in the Appendix to this permit.</li> <li>2. The Permittee shall perform a visual check, at least once per day, of the stack associated with this operation. This check shall be performed by a person familiar with Method 9. At any time, if any visible emissions are noted and not corrected within a period of one (1) hour, then a Method 9 observation must be performed within 4 hours of the initial observation. Maintenance shall be performed as needed. Any repairs of observed problems shall be recorded.</li> <li>3. The Permittee shall continuously (at least once every 15 minutes) monitor the WESP secondary voltage. The WESP secondary voltages shall, on 3-hr block averages, be maintained at levels equal to or greater than that recorded during the latest emissions test that indicated compliance with the applicable emissions limits for periods when each individual compartment or both compartments together are in operation.</li> </ol>	<p>Rule 335-3-16-.05(c)1.</p> <p>Rule 335-3-16-.05(c)1.</p> <p>Rule 335-3-16-.05(c)1.</p>
<p><i>Recordkeeping and Reporting Requirements</i></p> <ol style="list-style-type: none"> <li>1. The Permittee shall maintain a record of all monitoring required by this permit. This shall include all problems observed and any corrective action taken. The records shall be maintained in a form suitable for inspection and shall be kept on site for a period of at least five (5) years.</li> <li>2. The facility shall maintain a record of the Wet ESP (S67) secondary voltage required under this Permit. This shall include all problems observed and corrective actions taken. Each record shall be maintained in a form suitable for inspection for a period of at least five (5) years.</li> </ol>	<p>Rule 335-3-16-.05(c)2.</p> <p>Rule 335-3-16-.05(c)2.</p>

## APPENDIX – MONITORING

### *Compliance Plan for Scarfing Operations Wet Electrostatic Precipitator*

	Indicator 1	Indicator 2	Indicator 3
I. Indicator	Secondary Voltage	Inspection/Maintenance	Opacity
Measurement Approach	The WESP secondary voltage will be measured using the WESP controller.	Semi-annual inspections will be conducted and applicable maintenance will be performed according to work practices and procedures.	A visual check for emissions will be performed at least once per day. At any time, if any visible emissions are noted and not corrected within a period of (1) one hour, a visible emissions observation will be performed within 4 hours of the initial visual check.
II. Indicator Range	An excursion is defined as a 3-hr block average below the minimum required secondary voltage for periods where each individual compartment or both compartments together are in operation.	Excursions are defined as both not conducting semi-annual inspections properly and not performing necessary maintenance according to work practices and procedures.	An excursion is defined as the presence of visible emissions greater than 10% opacity. Excursions trigger an inspection, corrective action, and a reporting requirement.
III. Performance Criteria			
A. Data Representativeness	The voltage will be measured using the instrumentation provided with the WESP.	Inspections will be performed at the WESP.	Visual inspection logs will be maintained and audited to ensure VE readings are conducted. The daily visual check will be performed by a person familiar with EPA Method 9. The visible emission observations will be conducted according to EPA Method 9.
B. Verification of Operation Status	Records of the readings will be maintained.	Not Applicable	Records of the readings will be maintained.
C. QA/QC Practices and Criteria	Controller will develop and implement a periodic performance check system.	Qualified personal will conduct inspections and perform maintenance.	Method 9 reader will be certified, and training records will be maintained.
D. Monitoring Frequency	At least once every 15 minutes	Semi-annual inspections and Preventative maintenance conducted as needed	Daily visual checks and Visible emissions observations as required
E. Data Collection Procedures	The secondary voltage will be recorded with date and time.	Each inspection and maintenance item will be recorded.	Visual inspection logs for each check and observation shall be maintained.
F. Averaging Period	3-hour block average	Not Applicable	6-minute rolling average (every 15 seconds)